APPENDIX A. FISH AND BLUE CRAB COMPOSITING MEMORANDA



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MEMORANDUM

To: Robert Law, de maximis, inc.

From: Shannon Katka, Mike Johns, Windward Environmental LLC

Subject: Revised Sample Analysis Plan for Blue Crab Tissue for the Lower Passaic

River Restoration Project

Date: February 8, 2010

This memorandum summarizes compositing considerations and proposes a revised plan for analyzing blue crab tissues collected during summer 2009 in the Lower Passaic River Study Area (LPRSA) in support of a human health risk assessment (HHRA) and an ecological risk assessment (ERA). The proposed sample analysis plan and recommendations are based on the agreements reached between the US Environmental Protection Agency (USEPA) and the Cooperating Parties Group (CPG) and outlined in the *Quality Assurance Project Plan for the Fish and Decapod Crustacean Tissue Collection for Chemical Analysis and Fish Community Survey* (Windward 2009a), hereafter referred to as the Fish/Decapod QAPP, and per the discussions between CPG and USEPA at the January 20, 2010 fish/decapod tissue sampling meeting.

The following revisions were made to the November 6, 2009 crab analysis proposal (Windward 2009b) per the January 20, 2010 meeting:

- ◆ The maximum number of crab in composite samples not used for hepatopancreas-only tissue analysis¹ was reduced to 11. The number of crabs was reduced in the following samples: Comp01, Comp02, Comp03, Comp04, Comp15, Comp19, Comp20, and Comp23.
- ◆ Per USEPA January 12, 2010 comments (Windward 2009b), the following composites were modified to include/exclude crabs as requested by USEPA: Comp26, Comp36, Comp46, and Comp53.
- ◆ Samples that will be used for QC analysis have been identified in Appendix summary table (Table A1)

¹ More than 11 blue crab are needed to meet minimum mass requirements for hepatopancreas-only samples.

◆ The relationship of the largest and smallest crab lengths to the average length within a composite has been added to the Appendix summary table (Table A1)

USEPA agreed during the January 20, 2010, meeting that: 1) no additional sampling is needed for blue crab at this time, and 2) blue crab will be used as the decapod target species in the freshwater section in place of crayfish. The chemistry results of the blue crab collected in summer 2009 will be evaluated to determine whether additional sampling is necessary to meet the data needs of the baseline risk assessments. CPG will review the literature to verify that there are no significant differences in the uptake for chemicals into the hepatopancreas in estuarine or freshwater conditions.

1 OVERALL ANALYSIS PLAN

The Fish/Decapod QAPP (Windward 2009a) defined the estuarine zone as the part of the LPRSA between river mile (RM) 0 and RM 10 and the freshwater zone as the part of the LPRSA area above RM 10 (from RM 10 to RM 17.4). Five 2-mile reaches were defined in the estuarine zone; two 2-mile reaches and one 3.4-mile reach was defined in the freshwater zone (Table 1).

Zone	Reach	RM
	1	RM 0 – RM 2
	2	RM 2 – RM 4
Estuarine zone (RM 0 to RM 10)	3	RM 4 – RM 6
(* 5 15 * 15)	4	RM 6 – RM 8
	5	RM 8 – RM 10
Freshwater zone	6	RM 10 – RM 12
(RM 10 to RM	7	RM 12 – RM 14
17.4)	8	RM 14 – RM 17.4

Table 1. Summary of reach designations per zone

Blue crab were identified as the selected estuarine receptor per the Fish/Decapod QAPP (Windward 2009a). Blue crab collected from the freshwater zone were also retained for analysis per the Fish/Decapod QAPP.

Crayfish were selected as the freshwater decapod receptor; however, very few crayfish were collected during the summary 2009 sampling effort. A total of 7 crayfish were collected between RM 12 and RM 17.4, with a total mass of 32 g. Therefore no analysis is recommended for this organism. Rather, since blue crab was also a primary target for collection and analysis as proposed in the Fish/Decapod QAPP (Windward 2009a), and blue crab were caught in the freshwater zone, blue crab is recommended for analysis in lieu of the crayfish as the representative epibenthic omnivore in the estuarine zone, which is consistent with discussion between USEPA and CPG at the January 20, 2010 meeting.



The compositing criteria were outlined in the Fish/Decapod QAPP (Windward 2009a) and the following is a summary of compositing criteria in order of priority for decapods:

- 1. Composite by species.
- 2. Require a target tissue mass of 150 g (pre-homogenization) for analysis of all analyte groups. The mass of blue crab tissue types was estimated based on regressions developed from previous data.
- 3. Include a minimum of three specimens per composite sample (the maximum number of specimens per composite is variable).
- 4. Composite specimens of similar size based on length.²
- 5. Consider the following in concert:
 - Composite by location when possible
 - Composite specimens that meet minimum target length
 - Composite an equal number of males and females when possible (only relevant to crab)

All compositing criteria were considered on a species-specific basis. Exceptions to the criteria include the following:

- ◆ Three blue crab carcass samples and one blue crab hepatopancreas-only sample have an estimated mass that is slightly less than the targeted 150 g (mass ranges from 130 g to 149 g). Because of estimated masses may be different than actual masses measured in the laboratory during the compositing preparation, the analytical list of any sample that is found to have actual mass less than the target mass of 150 g will be discussed between USEPA and CPG prior to any analysis of that sample.
- Some of the proposed composites cannot be composited by location:
 - Some proposed blue crab composite samples will have to be composited across multiple sampling locations (within 0.5 mile)
 - One crab hepatopancreas-only sample will have to be composited across multiple 2-mile reaches
- One proposed crab composite is composed of specimens with a maximum body length that is just outside of the target of 25% of the mean length (all specimens are within 27% of the mean length).

The proposed sample analysis plan is presented in Table 2. The number of samples proposed in the Fish/Decapod QAPP (Windward 2009a) is presented in Column 4,

² In a call on September 9, 2009, USEPA and CPG agreed that fish and decapods are of similar size when the lengths of all specimens in a composite are within 25% of the mean length for that composite.



Target No. of Samples, and the number of samples proposed based on the actual catch is presented in Column 5, Proposed No. of Samples.

Table 2. Summary of proposed tissue samples	Table 2.	Summary	of pr	oposed	tissue	samples
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Feeding Guild	Target or Alternative Species	Type of Sample	Target No. of Samples	Proposed No. of Samples	Proposed Sample Type
		muscle/hepatopancreas	41	41	composite
	hlun arah	carcass	24	24	composite
Epibenthic omnivore	blue crab	muscle-only	21	21	composite
Ommoro		hepatopancreas-only	7	7	composite
	crayfish	whole body	27	0	none ^a

No data are proposed; this feeding guild is represented by blue crab, which were caught in both the estuarine and freshwater zones.

Figure 1 presents the locations of the blue crab composite samples proposed for analysis. Table A1 in Attachment A summarizes the proposed crab samples for analysis (and tissue type) and sampling locations based on assigned sample IDs. Attachment A also presents the details, including sample IDs, of all individual crab identified for chemistry analysis (Table A2) and specimen sampling locations (Table A3).

As specified in the Fish/Decapod QAPP (Windward 2009a), in order to conduct matrix-specific quality control (QC), 1 in every 20 samples per matrix type requires a mass of 450 g (this includes both mass for the matrix QC and the analytical sample). The proposed sample analysis plan is expected to provide sufficient mass to meet the matrix QC requirement based on the estimated mass per sample. In addition to QC samples, additional tissue mass is needed to satisfy USEPA split sample requests. Table A1 provides the estimated sample mass for all composites and tissue types and the selected samples for QC requirements, which can be used by USEPA to determine possible candidate samples for splits under this proposed sampling design. The selection of USEPA split samples should follow the selection of QC samples to ensure that sufficient mass is available for matrix QC as specified in the Fish/Decapod QAPP (Windward 2009a). It should be noted that because the estimated mass for hepatopancreas-only samples is based on previously collected data and no single composite sample can provide sufficient mass for QC, it is not known whether sufficient mass is available for QC analysis for this tissue type and will not be known until samples are actually homogenized and sample mass is measured.

It should also be noted that all specimens collected and retained during the 2009 sampling effort that are not proposed for analysis at this time will be retained for possible future analysis up to the specified holding time for tissue samples (1 year) per the Fish/Decapod QAPP (Windward 2009a). At the anniversary date of collection, the CPG will notify USEPA of its intent to discard any remaining samples.



2 EPIBENTHIC OMNIVORE: BLUE CRAB DETAILED ANALYSIS PLAN

Target Species/Tissue Type

- Estuarine and freshwater zone: blue crab (target number of samples per tissue type is presented in Table 3)
- ◆ Determine weights of each tissue type based on blue crab regressions developed from previously collected crab (Tierra Solutions 2002):
 - All soft tissue body weight (g) = $1.95 \times 1.95 \times$
 - Muscle weight (g) = $1.36 \times \text{body length} 143.51 \text{ (r2} = 0.51)$
 - Hepatopancreas weight (g) = $0.092 \times \text{body length} 5.23 \text{ (r2 = } 0.04)$
 - Muscle/hepatopancreas weight (g) = muscle weight + hepatopancreas weight
 - Carcass weight = soft tissue body weight (muscle weight + hepatopancreas weight)
- Estimated tissue mass is used to determine composites; however, actual mass measured following homogenization of samples may differ from estimated tissue mass.
- ◆ Target length: 4.5 in. (114 mm)

Catch Summary

- ◆ Crabs were caught in every reach throughout the LPRSA, with the largest number of acceptable crabs caught in Reaches 1 and 2 (RM 0 to RM 4) and fewer caught in Reaches 4 though 8 (RM 6 to RM 17.4).
- Of 892 crabs collected, 524 are acceptable for compositing. The remaining 368 are unacceptable for reasons noted in Table 3. However, crabs that are missing one or both claws are used to create four of the seven hepatopancreas-only samples.

Table 3. Rationale for the exclusion of crabs from composite samples

Reason for Exclusion	No. of Crabs Excluded
Crabs less than 4.5 in. (114 mm) in total length	201
Soft-shell crabs	12
Crabs missing one claw	121 ^{a, b}
Crabs missing both claws	17 ^{b, c}
Crabs with noted damage to claws, carapace, or abdominal apron	14 ^d
Crabs with incomplete claws (e.g., in process of regenerating claw)	3
Total	368

a Includes eight soft-shell crab.



Some crabs missing one or both claws were used to create four of the hepatopancreas-only samples.

c Includes three soft shell crab.

Analysis Options

The compositing plan proposed for blue crab (Table 4) meets the target number of tissue samples for all tissue types. All composites are made up of crabs collected from the same location or nearby locations (when insufficient tissue was available from one location), except for four of the hepatopancreas-only samples. Three of the hepatopancreas-only samples are made up of crabs collected within a single reach, and one of these samples is made up of crabs collected across multiple reaches (Reaches 6 through 8) in the freshwater zone.

Table 4. Proposed compositing plan for blue crabs

		No. of Crab Composite Samples											
RM	Reach	Muscle/HP	Carcass	Muscle-Only	HP-Only								
Estuarine Zone													
RM 0 – RM 2	1	8	8	5	2								
RM 2 – RM 4	2	6	6	4	2								
RM 4 – RM 6	3	4	4	2	1								
RM 6 – RM 8	4	4	4 ^{a,b}	0	0								
RM 8 – RM 10	5	2	2	1	0								
Total RM 0 – RM 10	1 – 5	24	24	12	5								
Freshwater Zone													
RM 10 – RM 12	6	5	0	3									
RM 12 – RM 14	7	6	0	3	2 ^c								
RM 14 – RM 17.4	8	6	0	3									
Total RM 10 – RM 17.4	6 – 8	17	0	9	2								

Includes three samples that do not have minimum mass requirements (150 g). Estimated sample mass ranges from 130 to 135 g.

HP - hepatopancreas

RM - river mile

Several issues were addressed to develop the blue crab compositing plan, including:

◆ Based on a comparison of the estimated total [carapace and soft tissue] mass and the actual total mass measured in the field laboratory, the regression from the 2002 Tierra fish community dataset (Tierra Solutions 2002) generally underpredicts total mass. These regressions may also underpredict individual tissue-type mass and, therefore are conservative estimates of mass. The



d Includes one soft shell crab.

Includes one sample in which the maximum crab length in the composite is not within 25% of the mean length of crabs within the composite (note that all crab are within 27% of the mean length).

One hepatopancreas-only sample is based on crabs from Reaches 6 and 7, and one hepatopancreas-only sample is based on crabs from Reach 8. The hepatopancreas-only sample from Reaches 6 and 7 does not meet minimum mass requirements (150 g); estimated sample mass is 145 g.

alternative is to use percent by mass to determine tissue-type weights; however, the Fish/Decapod QAPP (Windward 2009a) calls for use of the Tierra regressions.

- ◆ The distribution of crabs collected was variable, with more in the estuarine zone than in the freshwater zone, and the largest number in the lowest portion of the estuarine zone. To maximize the number of samples available for analysis, replicate samples were created when sufficient mass was available. At locations where the minimum mass was not met, crabs were combined with those from other locations (within 0.5 mile) to make samples of sufficient mass.
- ◆ Insufficient tissue was available to create all hepatopancreas-only samples on a reach-specific basis in the freshwater zone; one of the hepatopancreas-only samples is made up of crabs from Reaches 6 and 7. All other hepatopancreas-only samples are reach-specific composites (and location-specific composites, when possible).
- ◆ The number of males collected far exceeded the number of females (ratio is 458:66 of the crabs acceptable for compositing). Therefore, female crabs were distributed among composites when possible (most estuarine composites have zero to three females [one sample has four females]; all freshwater samples have zero or one female).
- ◆ Crabs are of similar size for each composite (i.e., within 25% of the mean size for that composite). One proposed crab composite sample (Comp33) contains a crab that is not within 25% of the mean length of the other crabs in the composite sample, although all crab are within 27% of the mean length in this sample.

Estuarine composite samples have 4 to 11 crabs in each composite for all tissue types, except for three muscle-only and four hepatopancreas-only samples, which are made up of 19 to 21 crabs each (Table 5). This number of crabs is required to meet the analytical mass requirements for hepatopancreas-only samples.

Table 5. Proposed compositing plan for blue crab in the estuarine zone

		No. of Samples										
Location ^a	Muscle/HP	Carcass	HP-Only	No. of Crabs in Composite Sample								
Reach 1	8	8	5	2	6 – 11 (21 ^b)							
LPR1I	2	2	0	0	11							
LPR1J	2	2	1	1	11 (21 ^b)							
LPR1K	2	2	2	1	11 (21 ^b)							
LPR1L	0	0	1	0	9							
LPR1M	1	1	1	0	8							
LPR1N	1	1	0	0	6							



Table 5. Proposed compositing plan for blue crab in the estuarine zone

Location ^a	Muscle/HP	Carcass	Muscle-Only	HP-Only	No. of Crabs in Composite Sample
Reach 2	6	6	4	2	9 – 11 (19 ^b – 21 ^b)
LPR2B/L	1	1	0	0	10
LPR2I	1	1	1	0	9 – 11
LPR2J	2	2	0	0	9 – 10
LPR2K	2	2	1	1	11 (21 ^b)
LPR2M	0	0	1	0	11
LPR2N	0	0	1	0	11
LPR2J/K/L	0	0	0	1	19 ^b
Reach 3	4	4	2	1	8 – 11 (21 ^b)
LPR3M	1	1	1	0	8
LPR3GH//N	1	1	0	0	11
LPR3O	2	2	1	0	8 – 10
LPR3F/H/M/N/O	0	0	0	1	21 ^b
Reach 4	4	4	0	0	4 – 6
LPR4O/F	1	1 ^c	0	0	5
LPR4G	1	1 ^c	0	0	4
LPR4H/L	1	1	0	0	6
LPR4P	1	1 ^{c, d}	0	0	5
Reach 5	2	2	1	0	6 – 7
LPR5E/M	1	1	0	0	7
LPR5J/O	1	1	1	0	6 – 7
Estuarine Total	24	24	12	5	4 – 11 (19 ^b – 21 ^b)

^a All blue crab sampling locations are presented in Table A3 of Attachment A. Table A1 of Attachment A presents a summary that links sampling locations with proposed composite samples.

HP - hepatopancreas



b Sample size based on composite samples where HP-only tissue will be analyzed.

^c Sample does not meet minimum mass requirements (150 g). Estimated sample mass ranges from 130 to 135 g.

Maximum crab length in the composite sample is not within 25% of the mean length of crabs within the composite sample (note that all crab are within 27% of the mean length).

A summary of the crab catch and proposed composites in each estuarine reach is presented below.

Reach 1

◆ Acceptable numbers of crabs were collected from six sampling locations; three sampling locations have replicate samples (n = 2) for muscle/hepatopancreas, carcass, and/or muscle-only composites.

Reach 2

- ◆ Acceptable numbers of crabs were collected from seven sampling locations; two locations have replicate samples (n = 2) for muscle/hepatopancreas and carcass composites.
- ◆ One composite sample is composed of a combination of crabs from locations LPR2B and LPR2L, which are adjacent to each other.
- One hepatopancreas-only sample was created using crabs missing one or both claws from three sampling locations in this reach.

Reach 3

- ◆ Acceptable numbers of crabs were collected from five sampling locations; one location had replicate samples (n = 2) for muscle/hepatopancreas and carcass.
- One composite sample is composed of a combination of crabs from locations LPR3G, LPR3H, and LPR3N, which were collected within approximately 0.5 miles of each other.
- One hepatopancreas-only sample was created using crabs missing one or both claws from five sampling locations in this reach.

Reach 4

- ◆ Acceptable numbers of crabs were collected from six sampling locations; no sampling locations had replicates.
- ◆ Three of four proposed carcass composite samples do not meet minimum mass requirements (150 g); mass in these samples ranges from 130 to 135 g.
- ◆ One composite is composed of a combination of crabs from LPR4H and LPR4L, which were collected approximately 0.1 mile apart; the two locations appear to be located on the same mudflat.
- ◆ One composite is composed of a combination of crabs from LPR4F and LPR4O, which were collected approximately 0.1 mile apart.

Reach 5

◆ Acceptable numbers of crabs were collected from four sampling locations; no sampling locations had replicates.



- ◆ One composite is composed of a combination of crabs from LPR5E and LPR5M, which were collected approximately 0.3 mile apart.
- ◆ One composite is composed of a combination of crabs from LPR5O and LPR5J, which were collected approximately 0.1 mile apart.

Composites of three to five crabs each are proposed for the freshwater zone for muscle/hepatopancreas and muscle-only tissues (Table 6). Hepatopancreas-only composite samples were composed of 19 to 20 crabs. The Fish/Decapod QAPP (Windward 2009a) did not propose the analysis of carcass samples from the freshwater zone, and none is proposed here. Crabs from the freshwater zone could be evaluated in the ERA using muscle/hepatopancreas samples and predicting whole-body soft-tissue concentrations based on estuarine data (e.g., use the ratio of the average percent contribution of chemical of potential concern (COPC) concentrations of the muscle/hepatopancreas samples to the whole-body concentration based on estuarine data and apply to freshwater muscle/hepatopancreas samples).

Table 6. Proposed compositing plan for blue crabs in the freshwater zone

		No. of S	amples		No. of Crabs per		
Location ^a	Muscle/HP	Carcass	Muscle-Only	HP-Only	Composite Sample		
Reach 6	5	0	3	0	3 – 5		
LPR6F	2	0	2	0	3 – 4		
LPR6G	2	0	1	0	4		
LPR6H/M	1	0	0	0	5		
Reach 6/7							
LPR6F/G/N, LPR7F/G/H/L/M/O	0	0	0	1	19 ^{b, c}		
Reach 7	6	0	0	3 – 5			
LPR7F	2	0	1	0	4		
LPR7G	3	0	2	0	3 – 4		
LPR7H	1	0	0	0	5		
Reach 8	6	0	3	0	3 – 5 (20°)		
LPR8J/V	2	0	0	0	4		
LPR8R	1	0	0	0	4		
LPR8K	2	0	2	0	3 – 4		
LPR8S	1	0	1	0	4 – 5		
LPR8J/K/M/R/S/V/W/Y	0	0	0	1	20°		
Freshwater Total	17	0	9	2	3 – 5 (19° – 20°)		

^a All blue crab sampling locations are presented in Table A3 of Attachment A. Table A1 of Attachment A presents a summary that links sampling locations with proposed composite samples.

Sample does not meet minimum mass requirements (150 g). Estimated sample mass is 145 g.



Sample size based on composite samples where HP-only tissue will be analyzed. HP – hepatopancreas

A summary of crab catch and proposed composites in each freshwater reach is presented below.

Reach 6

- ◆ Acceptable numbers of crabs were collected from four sampling locations; two locations had replicate samples (n = 2) for muscle/hepatopancreas and/or muscle-only.
- ◆ One composite is composed of a combination of crabs from LPR6H and LPR6M, which were collected approximately 0.4 mile apart.
- ◆ Insufficient mass of crabs is available for analysis from one location: LPR6N (only three crabs of limited mass); no analysis of samples from this location is proposed, nor is it recommended that these specimens be combined with specimens from other locations.
- ◆ One hepatopancreas-only sample was created using crabs missing one or both claws from three sampling locations in Reach 6 and six sampling locations in Reach 7. This sample does not meet minimum mass requirements (150 g); hepatopancreas-only mass in this sample is 145 g.

Reach 7

- ◆ Acceptable numbers of crabs were collected from three sampling locations; two locations had replicate samples (n = 2 to 3) for muscle/hepatopancreas and/or muscle-only.
- ◆ Insufficient mass of crabs is available for analysis from two locations: LPR7M (only one crab) and LPR7O (only one crab); no analysis of samples from these locations is proposed, nor is it recommended that these specimens be combined with specimens from other locations.

Reach 8

- ◆ Acceptable numbers of crabs were collected from five sampling locations; two locations had replicate samples (n = 2) for muscle/hepatopancreas and/or muscle-only.
- One composite is composed of a combination of crabs from LPR8J and LPR8V, which were collected approximately 0.3 mile apart but on different sides of the river.
- One hepatopancreas-only sample was created using crabs missing one or both claws from eight sampling locations in this reach.

Windward will work with the analytical laboratories to begin sample processing within 14 working days of USEPA's approval of this revised memorandum for blue crab and



routinely communicate with the CPG and USEPA during the processing of the blue crab tissue.

3 REFERENCES

- Tierra Solutions. 2002. Passaic River Study Area fish community data. September 18, 2002. Tierra Solutions, Inc., Newark, NJ.
- Windward. 2009a. Lower Passaic River Restoration Project. Quality Assurance Project Plan: Fish and decapod crustacean tissue collection for chemical analysis and fish community survey. Final. Prepared for Cooperating Parties Group, Newark, New Jersey. Windward Environmental LLC, Seattle, WA.
- Windward. 2009b. Memorandum dated November 6, 2009 to Robert Law, de maximis, inc.: Proposed sample analysis plan for fish/decapod tissue for the Lower Passaic River Restoration Project. Windward Environmental LLC, Seattle, WA.



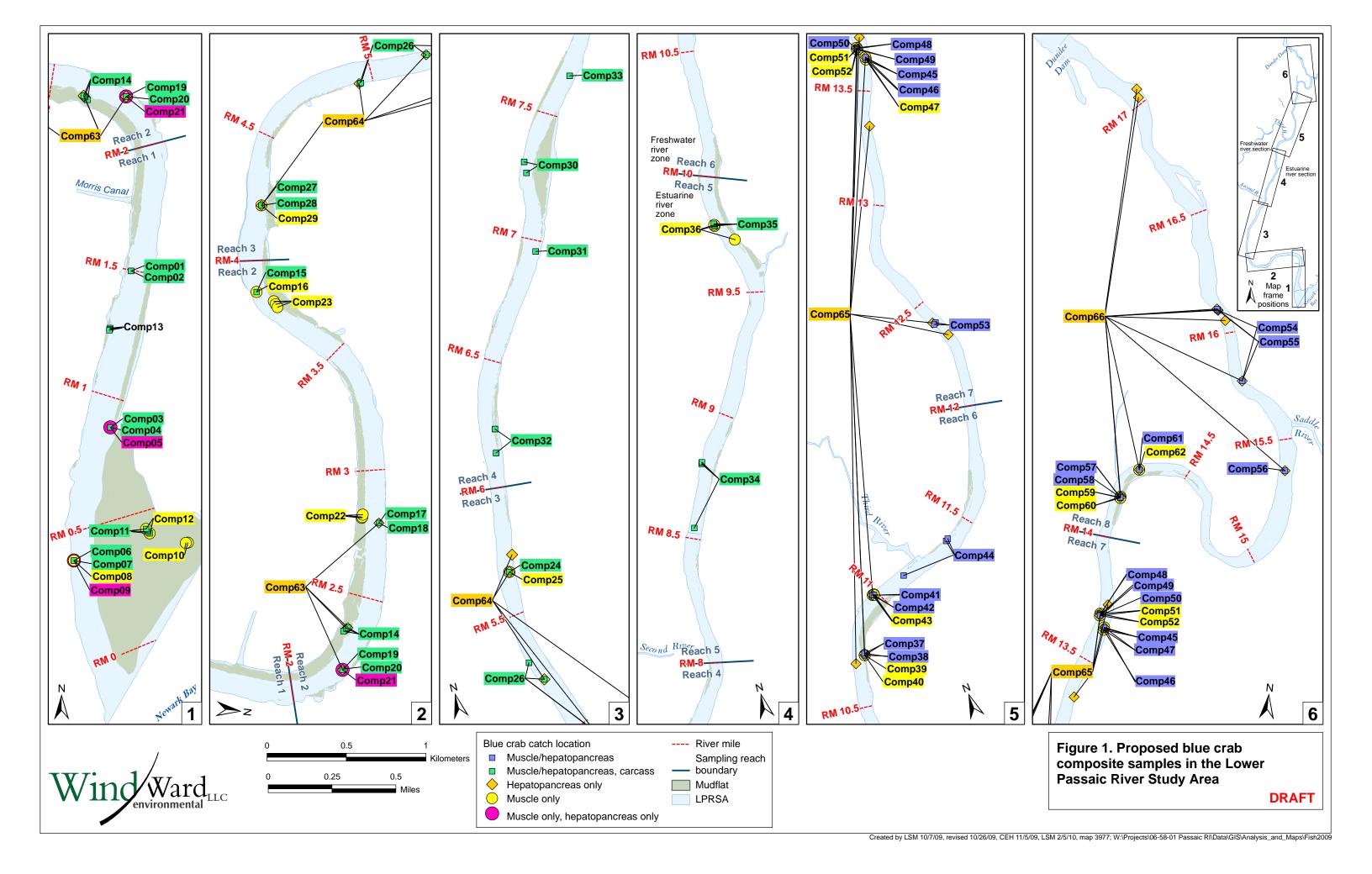


Table A1.	Summary of propos	sed blue crab composites				Estimated	Mass (g)		1				Len	gth (mm)	
					Muscle/		Muscle-			Male:				% differer	nce from ave
Reach	RM	Location	Composite ID (tissue type 1)	Composite ID (tissue type 2)	HP	Carcass	only	HP-only	n	Female	Average	Min	Max	Min	Max
1	RM 0 - RM 2	LPR1I	LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	588	323			11	9:2	139	118	150	15%	8%
1	RM 0 - RM 2	LPR1I	LPR1-CSMH-Comp02	LPR1-CSCT-Comp02	564	314			11	9:2	138	116	157	16%	14%
1	RM 0 - RM 2	LPR1J	LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	658	347			11	10:1	144	115	164	20%	14%
1	RM 0 - RM 2	LPR1J	LPR1-CSMH-Comp04	LPR1-CSCT-Comp04	607	329			11	10:1	140	125	161	11%	15%
1	RM 0 - RM 2	LPR1J	LPR1-CSMT-Comp05	LPR1-CSHT-Comp05			1106	169	21	20:1	144	115	170	20%	18%
1	RM 0 - RM 2	LPR1K	LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	508	295			11	9:2	134	115	157	14%	17%
1	RM 0 - RM 2	LPR1K	LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	715	366			11	10:1	147	119	169	19%	15%
1	RM 0 - RM 2	LPR1K	LPR1-CSMT-Comp08				487		11	10:1	138	115	162	17%	17%
1	RM 0 - RM 2	LPR1K	LPR1-CSMT-Comp09	LPR1-CSHT-Comp09			1070	166	21	19:2	143	115	174	20%	22%
1	RM 0 - RM 2	LPR1L	LPR1-CSMT-Comp10				553		9	8:1	151	114	170	24%	13%
1	RM 0 - RM 2	LPR1M	LPR1-CSMH-Comp11	LPR1-CSCT-Comp11	390	222			8	6:2	136	114	148	16%	9%
1	RM 0 - RM 2	LPR1M	LPR1-CSMT-Comp12				481		8	5:3	150	135	169	10%	13%
1	RM 0 - RM 2	LPR1N	LPR1-CSMH-Comp13	LPR1-CSCT-Comp13	348	185			6	6:0	142	129	157	9%	10%
2	RM 2 - RM 4	LPR2B/L	LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	518	288			10	8:2	138	117	173	15%	25%
2	RM 2 - RM 4	LPR2I	LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	472	283			11	7:3	132	116	160	12%	21%
2	RM 2 - RM 4	LPR2I	LPR2-CSMT-Comp16				474		9	6:3	144	133	159	8%	10%
2	RM 2 - RM 4	LPR2J	LPR2-CSMH-Comp17	LPR2-CSCT-Comp17	521	278			9	9:0	142	126	158	11%	11%
2	RM 2 - RM 4	LPR2J	LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	452	265			10	10:0	134	115	151	14%	13%
2	RM 2 - RM 4	LPR2K	LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	738	374			11	10:1	149	120	179	19%	20%
2	RM 2 - RM 4	LPR2K	LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	703	362			11	10:1	146	123	156	16%	7%
2	RM 2 - RM 4	LPR2K	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21			982	160	21	19:2	140	115	164	18%	17%
2	RM 2 - RM 4	LPR2M	LPR2-CSMT-Comp22				448		11	7:4	135	118	156	13%	15%
2	RM 2 - RM 4	LPR2N	LPR2-CSMT-Comp23				442		11	9:2	135	119	148	12%	10%
2	RM 2 - RM 4	LPR2J/K/L	LPR2-CSHT-Comp63					152	19	19:0	144	120	177	17%	23%
3	RM 4 - RM 6	LPR3M	LPR3-CSMH-Comp24	LPR3-CSCT-Comp24	232	167			8	5:3	122	115	137	6%	12%
3	RM 4 - RM 6	LPR3M	LPR3-CSMT-Comp25				162		8	6:2	120	114	133	5%	10%
3	RM 4 - RM 6	LPR3G/H?N	LPR3-CSMH-Comp26	LPR3-CSCT-Comp26	292	221			11	8:3	121	114	132	6%	9%
3	RM 4 - RM 6	LPR3O	LPR3-CSMH-Comp27	LPR3-CSCT-Comp27	518	288			10	8:2	138	116	168	16%	22%
3	RM 4 - RM 6	LPR3O	LPR3-CSMH-Comp28	LPR3-CSCT-Comp28	374	238			10	7:3	128	114	146	11%	14%
3	RM 4 - RM 6	LPR3O	LPR3-CSMT-Comp29				359		8	6:2	139	124	152	10%	10%
3	RM 4 - RM 6	LPR3F/H/M/N/O	LPR3-CSHT-Comp64					155	21	17:4	137	115	164	16%	20%
4	RM 6 - RM 8	LPR4O/F	LPR4-CSMH-Comp30	LPR4-CSCT-Comp30	226	133			5	3:2	134	118	151	12%	13%
4	RM 6 - RM 8	LPR4G	LPR4-CSMH-Comp31	LPR4-CSCT-Comp31	265	135			4	3:1	148	130	166	12%	12%
4	RM 6 - RM 8	LPR4H/L	LPR4-CSMH-Comp32	LPR4-CSCT-Comp32	276	161			6	5:1	134	115	148	14%	10%
4	RM 6 - RM 8	LPR4P	LPR4-CSMH-Comp33	LPR4-CSCT-Comp33	<u>220</u>	<u>131</u>			5	4:1	133	115	168	13%	27%
5	RM 8 - RM 10	LPR5E/M	LPR5-CSMH-Comp34	LPR5-CSCT-Comp34	235	158			7	5:2	126	120	140	4%	11%
5	RM 8 - RM 10	LPR5O	LPR5-CSMH-Comp35	LPR5-CSCT-Comp35	325	188			7	5:2	134	114	149	15%	11%
5	RM 8 - RM 10	LPR5J/O	LPR5-CSMT-Comp36		1		192		6	5:1	129	114	144	12%	12%
6	RM 10 - RM 12	LPR6F	LPR6-CSMH-Comp37		252		1		4	4:0	146	125	170	14%	17%
6	RM 10 - RM 12	LPR6F	LPR6-CSMH-Comp38		162				4	4:0	130	121	144	7%	11%
6	RM 10 - RM 12	LPR6F	LPR6-CSMT-Comp39				170		4	4:0	137	119	156	13%	14%
6	RM 10 - RM 12	LPR6F	LPR6-CSMT-Comp40				173		3	3:0	148	132	157	11%	6%
6	RM 10 - RM 12	LPR6G	LPR6-CSMH-Comp41		180				4	4:0	134	127	139	5%	4%
6	RM 10 - RM 12	LPR6G	LPR6-CSMH-Comp42		209				4	3:1	139	122	147	12%	6%
6	RM 10 - RM 12	LPR6G	LPR6-CSMT-Comp43		610		183		4	3:1	139	115	167	17%	20%
6	RM 10 - RM 12	LPR6H/M	LPR6-CSMH-Comp44		218				5	5:0	132	116	143	12%	8%
7	RM 12 - RM 14	LPR7F	LPR7-CSMH-Comp45		184				4	4:0	134	120	146	11%	9%
7	RM 12 - RM 14	LPR7F	LPR7-CSMH-Comp46		162				4	3:1	130	115	145	12%	11%
7	RM 12 - RM 14	LPR7F	LPR7-CSMT-Comp47		1		174		4	4:0	138	126	149	8%	8%
7	RM 12 - RM 14	LPR7G	LPR7-CSMH-Comp48		191		1		3	3:0	146	134	157	8%	7%
7	RM 12 - RM 14	LPR7G	LPR7-CSMH-Comp49		260				4	4:0	147	127	164	14%	11%
7	RM 12 - RM 14	LPR7G	LPR7-CSMH-Comp50		169				3	2:1	141	114	175	19%	24%
7	RM 12 - RM 14	LPR7G	LPR7-CSMT-Comp51				166	1	4	4:0	136	125	144	8%	6%

Table A1.	Summary of propos	sed blue crab composites				Estimated	Mass (g)							Length (mm)		
					Muscle/		Muscle-			Male:				% difference	ce from ave	
Reach	RM	Location	Composite ID (tissue type 1)	Composite ID (tissue type 2)	HP	Carcass	only	HP-only	n	Female	Average	Min	Max	Min	Max	
7	RM 12 - RM 14	LPR7G	LPR7-CSMT-Comp52				260		4	4:0	153	142	165	7%	8%	
7	RM 12 - RM 14	LPR7H	LPR7-CSMH-Comp53		271				5	5:0	140	115	168	18%	20%	
7, 8	multiple reaches	LPR6F/G/N, LPR7F/G/H/L/M/O	LPRX-CSHT-Comp65					145	19	17:2	140	120	161	14%	15%	
8	RM 14 - RM 17.4	LPR8J/V	LPR8-CSMH-Comp54		167				4	4:0	131	122	135	7%	3%	
8	RM 14 - RM 17.4	LPR8J/V	LPR8-CSMH-Comp55		196				4	4:0	136	116	167	15%	23%	
8	RM 14 - RM 17.4	LPR8R	LPR8-CSMH-Comp56		208				4	4:0	138	122	153	12%	11%	
8	RM 14 - RM 17.4	LPR8K	LPR8-CSMH-Comp57		223				4	4:0	141	121	174	14%	24%	
8	RM 14 - RM 17.4	LPR8K	LPR8-CSMH-Comp58		162				4	4:0	130	123	140	6%	7%	
8	RM 14 - RM 17.4	LPR8K	LPR8-CSMT-Comp59				157		3	3:0	144	142	145	1%	1%	
8	RM 14 - RM 17.4	LPR8K	LPR8-CSMT-Comp60				161		3	3:0	145	134	161	8%	11%	
8	RM 14 - RM 17.4	LPR8S	LPR8-CSMH-Comp61		309				5	5:0	145	133	159	8%	10%	
8	RM 14 - RM 17.4	LPR8S	LPR8-CSMT-Comp62			•	178		4	4:0	138	116	150	16%	8%	
8	RM 14 - RM 17.4	LPR8J/K/M/R/S/V/W/Y	LPR8-CSHT-Comp66			•		152	20	20:0	139	114	165	18%	18%	
				Total number of samples	41	24	21	7								

Notes:

Bold samples are samples with estimated mass of < 150 g; reduced analyte list may be necessary

<u>Underlined samples are samples where maximum crab length is not within 25% of the mean</u>

Shaded cells indicate the samples that will be used for QC analysis; all heptapancreas-only samples are shaded because the estimated mass for hepatopancreas-only samples is based on previously collected data and no single composite sample can provide sufficient mass for QC, it is not known whether sufficient mass is available for QC analysis for this tissue type and will not be known until samples are actually homogenized and sample mass is measured.

Table A2. Proposed composite samples for blue crab

Table A2	Propos	ed composi	ite samples i	or blue crab														
											Estimated	Estimated	Estimated	Estimated	Estimated			
	Location	1	Trap		Weight	Length	Collection		Reason for exclusion from	Estimated	soft tissue	Muscle/HP	Carcass	Muscle-	HP-only	Composite ID (tissue	Composite ID (tissue	
Reach	ID	Trap ID			(g)	(mm) Gend		Comments	composite?	WB weight		weight	weight	only weight	weight	type 1)	type 2)	Composite Notes
	LPR1I	LPR1I-A		LPR1I-CS315	228		Gillnet			165.9	99.8	66.2				LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS316 LPR1I-CS318	200		Gillnet			141.3	80.3	51.6				LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A1	LPR1I-CS318 LPR1I-CS319	222 246		Gillnet			155.8 171.1	92.0 103.7	60.3 69.1				LPR1-CSMH-Comp01	LPR1-CSCT-Comp01 LPR1-CSCT-Comp01	
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS319 LPR1I-CS320	246		Gillnet			165.9	99.8	66.2				LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	I PR1I	I PR1I-A	IPR1I-A1	LPR1I-CS320	106		Gillnet			98.5	41.3	22.6				LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS323	188		Gillnet			136.6	76.4	48.7	27.7			3 LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS324	212		Gillnet	Left claw included		187.3	115.4	77.8						
LPR1	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS325	170	131 male	Gillnet	Missing right leg		125.3	66.7	41.5	25.2	34.7	6.8	LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
LPR1	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS326	180	131 male	Gillnet			125.3	66.7	41.5	25.2	34.7	6.8	B LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
LPR1	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS327	196	139 male	Gillnet			143.6	82.3	53.1	29.2	45.5	7.6	5		
LPR1	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS330	118	115 male	Gillnet	Missing right leg and right claw, included		92.8	35.5	18.2	17.3	12.9	5.4	1		
LPR1	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS409	202	157 male	Gillnet	Missing right leg		190.1	117.4	79.2	38.2	70.0			LPR1-CSCT-Comp02	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS410	186		Gillnet			153.3	90.1	58.9					LPR1-CSCT-Comp02	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS411	182		Gillnet			148.4	86.2	56.0					LPR1-CSCT-Comp02	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS412	136		Gillnet			155.8	92.0	60.3				LPR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A2 LPR1I-A2	LPR1I-CS413 LPR1I-CS414	218 156		Gillnet	Right spine damaged		129.7 141.3	70.6 80.3	44.4 51.6				LPR1-CSMH-Comp02	LPR1-CSCT-Comp02 LPR1-CSCT-Comp02	
	LPR1I LPR1I						Gillnet	Right spine and leg damaged				51.6 45.8						
	LPR1I	LPR1I-A LPR1I-A	LPR1I-A2 LPR1I-A2	LPR1I-CS418 LPR1I-CS419	182 172		Gillnet	Missing left leg		132.0 132.0	72.5 72.5	45.8 45.8				LPR1-CSMH-Comp02 LPR1-CSMH-Comp02	LPR1-CSCT-Comp02 LPR1-CSCT-Comp02	
	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A2 LPR1I-A2	LPR1I-CS419 LPR1I-CS420	172		Gillnet	Broken left spine		132.0	72.5 92.0	45.8 60.3				LPR1-CSMH-Comp02 LPR1-CSMH-Comp01	LPR1-CSCT-Comp02 LPR1-CSCT-Comp01	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS420 LPR1I-CS421	142		Gillnet	Missing right leg		127.5	68.6	42.9				PR1-CSMH-Comp01	LPR1-CSCT-Comp01	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS421	1142		Gillnet			94.7	37.4	19.7				LPR1-CSMH-Comp02	LPR1-CSCT-Comp02	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS423	112		Gillnet			132.0	72.5	45.8				LPR1-CSMH-Comp02	LPR1-CSCT-Comp02	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS424	224		Gillnet	Missing left swimmerette and leg		179.1	109.6	73.4				3 LPR1-CSMH-Comp02	LPR1-CSCT-Comp02	
	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS425	214		Gillnet	5		201.4	125.2	85.0						
LPR1	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS426	164	134 male	Gillnet			132.0	72.5	45.8	26.7	38.7	7.:	ı		
LPR1	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS427	222	148 male	Gillnet			165.9	99.8	66.2	33.7	57.8	8.4	1		
LPR1	LPR1I	LPR1I-A	LPR1I-A2	LPR1I-CS428	164	153 male	Gillnet			179.1	109.6	73.4	36.2	64.6	8.8	3		
LPR1	LPR1I	LPR1I-A	LPR1I-A3	LPR1I-CS564	176	136 male	Gillnet	Missing right leg; damage to right swimmere	tte	136.6	76.4	48.7	27.7	41.5	7.3	3		
LPR1	LPR1I	LPR1I-A	LPR1I-A3	LPR1I-CS565	182	130 male	Gillnet			123.1	64.7	40.0			6.7	7		
LPR1	LPR1I	LPR1I-A	LPR1I-A3	LPR1I-CS569	268	156 male	Gillnet	Missing left and right leg		187.3	115.4	77.8	37.7			l .		
	LPR1I	LPR1I-A	LPR1I-A3	LPR1I-CS570	158		Gillnet	Missing right leg		125.3	66.7	41.5						
	LPR1I	LPR1I-A	LPR1I-A4	LPR1I-CS650	196		Gillnet			150.9	88.1	57.4						
	LPR1I	LPR1I-A	LPR1I-A4	LPR1I-CS651	204		Gillnet			168.5	101.8	67.6						
	LPR1I	LPR1I-A	LPR1I-A5	LPR1I-CS702	174		Gillnet			136.6	76.4	48.7	27.7					
	LPR1I	LPR1I-A	LPR1I-A5	LPR1I-CS703	196		Gillnet			148.4	86.2	56.0						
	LPR1I I PR1I	LPR1I-A LPR1I-A	LPR1I-A5 LPR1I-A5	LPR1I-CS706 LPR1I-CS707	190 212		Gillnet			184.6 148.4	113.5 86.2	76.3 56.0						
	LPR1I	LPR1I-A	LPR1I-A5	LPR1I-CS707 LPR1I-CS708	232		Gillnet	Missing left leg		171.1	103.7	69.1				-		
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS332	210		Gillnet	Missing right swimmerette		160.8	95.9	63.3				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS333	198		Gillnet	Wildship right swimmerette		143.6	82.3	53.1				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS334	102		Gillnet			94.7	37.4	19.7				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS335	188		Gillnet			141.3	80.3	51.6				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
LPR1	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS336	154	134 male	Gillnet	Missing left leg		132.0	72.5	45.8	26.7	38.7	7.:	LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
LPR1	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS338	270	157 male	Gillnet			190.1	117.4	79.2	38.2	70.0	9.2	LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
LPR1	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS339	206	143 male	Gillnet			153.3	90.1	58.9	31.2	51.0	7.9	LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS340	192		Gillnet	Left swimmerette included		163.4	97.9	64.7				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS341	318		Gillnet			228.3	142.7	98.1				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS342	332		Gillnet	Right spine damaged		225.2	140.8	96.6				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS343	286		Gillnet	Left spine damaged		198.6	123.2	83.6				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS344	234		Gillnet	Missing right leg		168.5	101.8	67.6				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A2 LPR1J-A2	LPR1J-CS440 LPR1J-CS441	224 260		Gillnet			155.8 187.3	92.0 115.4	60.3 77.8	31.7 37.7			LPR1-CSMT-Comp05 LPR1-CSMT-Comp05	LPR1-CSHT-Comp05 LPR1-CSHT-Comp05	
	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A2	LPR1J-CS441 LPR1J-CS443	160		Gillnet	Missing left leg		187.3	115.4 55.0	77.8 32.8				LPR1-CSM1-Comp05	LPR1-CSH1-Comp05 LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS444	190		Gillnet	Missing right leg		165.9	99.8	66.2				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS445	184		Gillnet	Missing left leg		168.5	101.8	67.6				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS446	214		Gillnet			165.9	99.8	66.2				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS448	152		Gillnet			123.1	64.7	40.0				7 LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS449	220		Gillnet			160.8	95.9	63.3				LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS450	202		Gillnet			150.9	88.1	57.4				LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS451	154	127 male	Gillnet			116.7	58.9	35.7	23.2	29.2	6.5	LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS455	214	147 male	Gillnet			163.4	97.9	64.7	33.2			LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS456	190		Gillnet			150.9	88.1	57.4				LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS457	226		Gillnet			201.4	125.2	85.0				LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS460	282		Gillnet			210.2	131.0	89.4				PR1-CSMH-Comp03	LPR1-CSCT-Comp03	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS461	190		Gillnet			143.6	82.3	53.1					LPR1-CSCT-Comp04	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS462	178		Gillnet	Missing left swimmerette		150.9	88.1	57.4				LPR1-CSMH-Comp04	LPR1-CSCT-Comp04	
	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS463	296		Gillnet			201.4	125.2	85.0				LPR1-CSMH-Comp04	LPR1-CSCT-Comp04	
	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A2	LPR1J-CS464 LPR1J-CS465	236		Gillnet			184.6 181.8	113.5 111.5	76.3 74.9				LPR1-CSMH-Comp04 LPR1-CSMH-Comp04	LPR1-CSCT-Comp04 LPR1-CSCT-Comp04	
	LPR1J IPR1I	LPR1J-A LPR1J-A	LPR1J-A2 LPR1J-A3	LPR1J-CS465 LPR1J-CS577	188		Gillnet	+		181.8	74.5	74.9 47.3				LPR1-CSMH-Comp04 LPR1-CSMH-Comp04	LPR1-CSCT-Comp04 LPR1-CSCT-Comp04	
	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A3	LPR1J-CS577 LPR1J-CS578	188		Gillnet			134.3	74.5 68.6	47.3				LPR1-CSMH-Compu4	LPR1-CSCT-Comp04	
	LPR1J	LPR1J-A	LPR1J-A3	LPRIJ-CS578 LPRIJ-CS579	168		Gillnet			134.3	74.5	42.9				LPR1-CSMH-Comp04	LPR1-CSCT-Comp04	
	LPR1J	LPRIJ-A	LPRIJ-A3	LPRIJ-CS579 LPRIJ-CS580	104		Gillnet			112.5	74.5 55.0	47.3 32.8				· · · · · · · · · · · · · · · · · · ·	LPR1-CSCT-Comp04	
	LPR1J	LPR1J-A	LPR1J-A3	LPR1J-CS583	194		Gillnet	Damaged right spine		136.6	76.4	48.7	27.7			LPR1-CSMH-Comp04		
	LPR1J	LPR1J-A		LPR1J-CS586	232		Gillnet	Missing right swimmerette		181.8	111.5	74.9					compos	
	LPR1J	LPR1J-A		LPR1J-CS588	234		Gillnet	5 5 1		173.8	105.7	70.5						
	LPR1J	LPR1J-A		LPR1J-CS589	200		Gillnet			158.3	94.0	61.8					İ	
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Table A2. Proposed composite samples for blue crab

Table A2	. Propos	ed composi	ite samples f	or blue crab														
	Location		Trap		Molaht	Longth	Collection		Reason for exclusion from	Estimated	Estimated soft tissue	Estimated Muscle/HP	Estimated Carcass	Estimated Muscle-	Estimated HP-only	Composite ID (tissue	Composite ID (tissue	
Reach	Location	Trap ID		Specimen ID	Weight (g)	Length (mm) Geno		Comments	composite?	WB weight		Muscle/HP weight	weight	only weight	weight	type 1)	type 2)	Composite Notes
	LPR1J	LPR1J-A		LPR1J-CS590	166	131 male	Gillnet	Commence	composite.	125.3	66.7	41.5	25.2		6.8		(4pc 2)	composite Notes
	LPR1J	LPR1J-A		LPR1J-CS591	290	174 male	Gillnet	Missing right leg, left leg		240.8	150.5	103.9	46.6		10.8			
LPR1	LPR1J	LPR1J-A	LPR1J-A3	LPR1J-CS592	92	115 female	Gillnet			92.8	35.5	18.2	17.3	12.9	5.4	4 LPR1-CSMT-Comp05	LPR1-CSHT-Comp05	
	LPR1J	LPR1J-A	LPR1J-A4	LPR1J-CS663	304	163 male	Gillnet	Damaged left swimmerette		207.2	129.1	87.9	41.2		9.8	-		
	LPR1J	LPR1J-A	LPR1J-A4	LPR1J-CS664	344	178 male	Gillnet	Missing 1 right leg		253.8	158.3	109.7	48.6		11.:			
	LPR1J	LPR1J-A	LPR1J-A4	LPR1J-CS666	178	137 male	Gillnet			138.9	78.4	50.2	28.2		7.4			
	LPR1J LPR1J	LPR1J-A	LPR1J-A4 LPR1J-A4	LPR1J-CS667	312 248	162 male	Gillnet			204.3	127.1	86.5	40.7		9.7		LPR1-CSCT-Comp03	
	LPR1J	LPR1J-A LPR1J-A	LPR1J-A4 LPR1J-A4	LPR1J-CS669 LPR1J-CS670	114	151 male 131 female	Gillnet	Missing right leg; left spine damaged		173.8 125.3	105.7 66.7	70.5 41.5	35.2 25.2			7 LPR1-CSMH-Comp03 8 LPR1-CSMH-Comp04	LPR1-CSCT-Comp03	
	LPR1J	LPR1J-A	LPR1J-A4	LPR1J-CS671	228	151 male	Gillnet			173.8	105.7	70.5	35.2			7 LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
	I PR1I	LPR11-A	I PR1I-A4	LPR1I-CS673	168	138 male	Gillnet	Missing left leg		141.3	80.3	51.6	28.7			5 LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
LPR1	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS691	192	142 male	Gillnet			150.9	88.1	57.4	30.7	49.6	7.8	8 LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
LPR1	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS692	102	114 male	Gillnet			91.0	33.5	16.8	16.8	11.5	5.3			
LPR1	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS693	272	157 male	Gillnet			190.1	117.4	79.2	38.2	70.0	9.2	2		
	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS695	220	150 male	Gillnet	Damaged left swimmerette		171.1	103.7	69.1	34.7		8.6			
	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS696	310		Gillnet			222.2	138.8	95.2						
	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS697	218	151 male	Gillnet	Missing left leg; damage to right swimmere	ttes	173.8	105.7	70.5	35.2		8.7			
	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS698	182	138 male	Gillnet			141.3	80.3	51.6	28.7		7.5			
	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS699	96	116 male	Gillnet	Missing left swimmerette		94.7	37.4	19.7	17.7		5.4			
	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS700	98	115 female		Missing left leg		92.8	35.5	18.2	17.3			4 LPR1-CSMH-Comp03	LPR1-CSCT-Comp03	
	LPR1J LPR1K	LPR1J-A	LPR1J-A5 LPR1K-A1	LPR1J-CS701 LPR1K-CS347	124 170	127 male	Gillnet			116.7	58.9 68.6	35.7 42.9	23.2		6.5	9 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A		LPR1K-CS347 LPR1K-CS348	186	132 male	Gillnet	Right spine broken		150.9	88.1	42.9 57.4	30.7				LPR1-CSCT-Comp06	
	IPR1K	LPR1K-A		LPR1K-CS348 LPR1K-CS352	138	131 male	Gillnet	mbire spille broken		125.3	66.7	41.5	25.2			8 LPR1-CSMH-Comput	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS353	140	118 male	Gillnet			98.5	41.3	22.6	18.7			6 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS354	114	115 male	Gillnet			92.8	35.5	18.2	17.3			4 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS355	288	157 male	Gillnet			190.1	117.4	79.2	38.2			2 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	
LPR1	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS358	102	115 male	Gillnet	Missing left leg		92.8	35.5	18.2	17.3	12.9		4 LPR1-CSMT-Comp08	· ·	
LPR1	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS359	142	117 male	Gillnet	Right spine broken		96.6	39.4	21.1	18.2	15.6	5.5	5 LPR1-CSMT-Comp08		
LPR1	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS360	106	141 female	Gillnet	Missing left leg		148.4	86.2	56.0	30.2	48.3		7 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A		LPR1K-CS467	218	154 male	Gillnet			181.8	111.5	74.9	36.7			9 LPR1-CSMT-Comp08		
	LPR1K	LPR1K-A		LPR1K-CS469	178	136 male	Gillnet			136.6	76.4	48.7	27.7			3 LPR1-CSMT-Comp08		
	LPR1K	LPR1K-A		LPR1K-CS472	164	131 male	Gillnet			125.3	66.7	41.5	25.2			8 LPR1-CSMT-Comp08		
	LPR1K	LPR1K-A	LPR1K-A2	LPR1K-CS476	254	148 male	Gillnet			165.9	99.8	66.2	33.7			4 LPR1-CSMT-Comp08		
	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A2 LPR1K-A2	LPR1K-CS478 LPR1K-CS480	190 118	137 male	Gillnet			138.9 94.7	78.4 37.4	50.2 19.7	28.2 17.7			4 LPR1-CSMH-Comp06 4 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06 LPR1-CSCT-Comp06	
	IPR1K	LPR1K-A	LPR1K-A2	LPR1K-CS480	280	116 male 169 male	Gillnet			225.2	140.8	96.6	44.1			3 LPR1-CSMH-Comput	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A	LPR1K-A2	LPR1K-CS484	178	142 male	Gillnet			150.9	88.1	57.4	30.7			8 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS501	226	147 male	Gillnet			163.4	97.9	64.7				3 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A		LPR1K-CS502	202	149 male	Gillnet			168.5	101.8	67.6	34.2			5 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3		278	160 male	Gillnet			198.6	123.2	83.6	39.7			5 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
LPR1	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS505	198	145 male	Gillnet			158.3	94.0	61.8	32.2	53.7		1 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
LPR1	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS506	240	150 male	Gillnet			171.1	103.7	69.1	34.7	60.5	8.6	6 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS507	232	151 male	Gillnet	Missing left leg		173.8	105.7	70.5	35.2			7 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS508	124	136 female		Left claw included		136.6	76.4	48.7	27.7			3 LPR1-CSMH-Comp06	LPR1-CSCT-Comp06	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS509	262	156 male	Gillnet			187.3	115.4	77.8	37.7			1 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS511	150	131 male	Gillnet			125.3	66.7	41.5	25.2			8 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS513	200	152 male	Gillnet			176.4	107.6	72.0				B LPR1-CSMH-Comp06 6 LPR1-CSMT-Comp08	LPR1-CSCT-Comp06	
	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A3	LPR1K-CS515 LPR1K-CS516	192 264	139 male 158 male	Gillnet			143.6 192.9	82.3 119.3	53.1 80.7	29.2 38.7			3 LPR1-CSMT-Comp08		
	IPR1K	LPR1K-A		IPR1K-CS516	264	162 male	Gillnet	Missing left log		204.3	127.1	86.5	40.7			7 LPR1-CSMT-Comp08		
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS517	168	162 male	Gillnet	Missing left leg		155.8	92.0	60.3	31.7			D LPR1-CSMT-Comp08		
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS520	192	152 male	Gillnet	Missing right swimmerette		176.4	107.6	72.0	35.7			8 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS521	110	115 male	Gillnet	Missing left leg		92.8	35.5	18.2	17.3			4 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS522	100	119 female		Both swimmerettes damaged		100.4	43.3	24.0	19.2			7 LPR1-CSMH-Comp07	LPR1-CSCT-Comp07	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS523	194	139 male	Gillnet			143.6	82.3	53.1				6 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS524	128	118 male	Gillnet	Shell damaged; missing left leg		98.5	41.3	22.6	18.7			6 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A4		288	165 male	Gillnet	Missing right leg		213.1	133.0	90.8	42.2			D LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS608	92	115 female	Gillnet	Left swimmerette damaged		92.8	35.5	18.2	17.3			4 LPR1-CSMT-Comp08		
	LPR1K	LPR1K-A	LPR1K-A4		210	142 male	Gillnet			150.9	88.1	57.4	30.7			8 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS611	180	139 male	Gillnet			143.6	82.3	53.1	29.2			6 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS612	264	168 male	Gillnet	Missing left leg		222.2	138.8	95.2	43.6			LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS616	112	119 female	Gillnet			100.4	43.3	24.0 99.6	19.2			7 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A4 LPR1K-A4	LPR1K-CS617 LPR1K-CS619	266 98	171 male 118 female	Gillnet			231.4 98.5	144.7 41.3	99.6 22.6	45.1 18.7			5 LPR1-CSMT-Comp09 6 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09 LPR1-CSHT-Comp09	
	LPR1K LPR1K	LPR1K-A	LPR1K-A4 LPR1K-A4	LPR1K-CS620	186	118 female	Gillnet			136.6	41.3 76.4	48.7	27.7			3 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09 LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS620 LPR1K-CS623	226	136 male	Gillnet			201.4	125.2	48.7 85.0	40.2			6 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS624	256	158 male	Gillnet			192.9	119.3	80.7	38.7			3 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS676	324	174 male	Gillnet	Missing left leg		240.8	150.5	103.9	46.6			B LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS679	350	170 male	Gillnet	Missing right leg		228.3	142.7	98.1	44.6			4 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS680	168	133 male	Gillnet	Missing 2 left legs		129.7	70.6	44.4	26.2			D LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
LPR1	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS681	260	161 male	Gillnet			201.4	125.2	85.0	40.2	75.5	9.6	6 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A		LPR1K-CS685	94	115 male	Gillnet			92.8	35.5	18.2	17.3			4 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS686	130	125 male	Gillnet	Right leg included		112.5	55.0	32.8	22.2			3 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS689	128	124 male	Gillnet	Missing right leg		110.4	53.0	31.3	21.7			2 LPR1-CSMT-Comp09	LPR1-CSHT-Comp09	
	LPR1L	LPR1L-A	LPR1L-A2	LPR1L-CS433	116	114 male	Crab Trap			91.0	33.5	16.8	16.8			3 LPR1-CSMT-Comp10		
	LPR1L	LPR1L-A	LPR1L-A2	LPR1L-CS485	254	153 male	Crab Trap			179.1	109.6	73.4	36.2			8 LPR1-CSMT-Comp10		
	LPR1L	LPR1L-B		LPR1L-CS491	168	154 female	Crab Trap	-		181.8	111.5	74.9	36.7			PR1-CSMT-Comp10		
LPR1	LPR1L	LPR1L-B	LPR1L-B3	LPR1L-CS557	194	137 male	Crab Trap	Damaged right spine		138.9	78.4	50.2	28.2	42.8	7.4	LPR1-CSMT-Comp10		

Table A2. Proposed composite samples for blue crab

Table A2	. Propos	ed composi	ite samples f	or blue crab														
											Estimated	Estimated						
	Location	1	Trap		Weight		Collection		Reason for exclusion from	Estimated	soft tissue	Muscle/HP	Carcass	Muscle-	HP-only	Composite ID (tissue	Composite ID (tissue	
Reach LPR1	ID LPR1L	Trap ID LPR1L-A		Specimen ID LPR1L-CS559	(g) 304	(mm) Gender 169 male	Method Crab Trap	Comments	composite?	WB weight 225.2	WB weight 140.8	weight 96.6	weight 44.1	only weight 86.3		type 1) 3 LPR1-CSMT-Comp10	type 2)	Composite Notes
	LPR1L LPR1I	LPR1L-A		LPR1L-CS559	236		Crab Trap			192.9		96.6				3 LPR1-CSMT-Comp10 3 LPR1-CSMT-Comp10		
LPR1	LPR1L	LPR1L-A		LPR1L-CS573	192		Crab Trap			148.4						7 LPR1-CSMT-Comp10		
	LPR1L	LPR1L-A		LPR1L-CS741	234		Crab Trap	Missing 1 left and 1 right leg		198.6		83.6				5 LPR1-CSMT-Comp10		
	LPR1L	LPR1L-A		LPR1L-CS742	346		Crab Trap			228.3		98.1				4 LPR1-CSMT-Comp10		
LPR1	LPR1M	LPR1M-B	LPR1M-B2	LPR1M-CS486	220	148 male	Crab Trap			165.9	99.8	66.2	33.7	7 57.8	8.4	4 LPR1-CSMH-Comp11	LPR1-CSCT-Comp11	
LPR1	LPR1M	LPR1M-B	LPR1M-B2	LPR1M-CS487	106	114 male	Crab Trap			91.0	33.5	16.8	16.8	3 11.5	5.3	3 LPR1-CSMH-Comp11	LPR1-CSCT-Comp11	
LPR1	LPR1M	LPR1M-B	LPR1M-B2	LPR1M-CS488	168	141 male	Crab Trap	Left leg included		148.4	86.2	56.0	30.2	48.3	7.3	7 LPR1-CSMH-Comp11	LPR1-CSCT-Comp11	
	LPR1M	LPR1M-C		LPR1M-CS492	38		Crab Trap			92.8							LPR1-CSCT-Comp11	
	LPR1M	LPR1M-C		LPR1M-CS493	188		Crab Trap			148.4		56.0				7 LPR1-CSMH-Comp11	LPR1-CSCT-Comp11	
LPR1 LPR1	LPR1M LPR1M	LPR1M-C LPR1M-B	LPR1M-C2 LPR1M-B3	LPR1M-CS494 LPR1M-CS555	124 168		Crab Trap Crab Trap	Missing left leg		155.8 158.3	92.0				8.0	D LPR1-CSMH-Comp11 1 LPR1-CSMH-Comp11	LPR1-CSCT-Comp11 LPR1-CSCT-Comp11	
LPR1	LPR1M	LPR1M-A	LPR1M-A3		106	140 female	Crab Trap	Wilding reference		146.0		54.5	29.7		7.1	7 LPR1-CSMT-Comp12	Li NI Coci Compili	
LPR1	LPR1M	LPR1M-A	LPR1M-A3	LPR1M-CS558	184	140 male	Crab Trap			146.0	84.2	54.5		7 46.9	7.	7 LPR1-CSMH-Comp11	LPR1-CSCT-Comp11	
	LPR1M LPR1M	LPR1M-C	LPR1M-C3		282		Crab Trap			225.2	140.8	96.6 74.9	44.1			3 LPR1-CSMT-Comp12		
	LPR1M LPR1M	LPR1M-A	LPR1M-A3	LPR1M-CS561 LPR1M-CS575	158 184		Crab Trap Crab Trap			181.8 134.3	111.5 74.5	47.3		2 40.1	8.5	9 LPR1-CSMT-Comp12 2 LPR1-CSMT-Comp12		
LPR1	LPR1M	LPR1M-A		LPR1M-CS632	272		Crab Trap			195.7	121.3	82.1				4 LPR1-CSMT-Comp12		
LPR1	LPR1M	LPR1M-C		LPR1M-CS643	290	163 male	Crab Trap			207.2	129.1	87.9	41.2	2 78.2	9.8	8 LPR1-CSMT-Comp12		
LPR1	LPR1M LPR1M	LPR1M-C	LPR1M-C5	LPR1M-CS732	192	139 male	Crab Trap			143.6	82.3	53.1 53.1	29.2		7.6	6 LPR1-CSMT-Comp12		
LPR1 LPR1	LPR1M LPR1N	LPR1M-A LPR1N-A		LPR1M-CS734 LPR1N-CS378	112 188		Crab Trap Crab Trap			143.6 153.3	82.3 90.1		29.2 31.2			6 LPR1-CSMT-Comp12 9 LPR1-CSMH-Comp13	LPR1-CSCT-Comp13	
LPR1	LPR1N	LPR1N-B	LPR1N-B1	LPR1N-CS379	180	133 male	Crab Trap			129.7	70.6	44.4	26.2	2 37.4	7.0	D LPR1-CSMH-Comp13	LPR1-CSCT-Comp13	
	LPR1N	LPR1N-C		LPR1N-CS432	162		Crab Trap			120.9	62.8	38.6	24.2	31.9	6.6	6 LPR1-CSMH-Comp13	LPR1-CSCT-Comp13	
	LPR1N LPR1N	LPR1N-A		LPR1N-CS489 LPR1N-CS631	254 206		Crab Trap Crab Trap	Missing 2 right legs, right swimmerette dam	aged	190.1 143.6	117.4 82.3	79.2 53.1			9.3	2 LPR1-CSMH-Comp13 6 LPR1-CSMH-Comp13	LPR1-CSCT-Comp13 LPR1-CSCT-Comp13	
LPR1	LPR1N LPR1N	LPR1N-B	LPR1N-B4	LPR1N-CS631	206		Crab Trap	Missing 1 left leg		143.6	109.6	73.4				B LPR1-CSMH-Comp13 B LPR1-CSMH-Comp13	LPR1-CSCT-Comp13 LPR1-CSCT-Comp13	
LPR2	LPR2B	LPR2B-A	LPR2B-A3	LPR2B-CS594	134	133 maic	Minnow Trap			114.6	56.9	34.2	22.7			4 LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother
LPR2	LPR2B	LPR2B-A	LPR2B-A3	LPR2B-CS600	286	173 male	Minnow Trap			237.7	148.6	102.5	46.1	1 91.8	10.7	7 LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother
LPR2	LPR2I	LPR2I-A	LPR2I-A1	LPR2I-CS265	228	160 male	Gillnet	Marian Info malana and		198.6	123.2	83.6	39.7	74.1	9.5	5 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2 LPR2	LPR2I LPR2I	LPR2I-A LPR2I-A	LPR2I-A1 LPR2I-A1	LPR2I-CS266 LPR2I-CS267	200 182		Gillnet	Missing left swimmerette		168.5 138.9	101.8 78.4	67.6 50.2	34.2 28.2		8.5	LPR2-CSMH-Comp15 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15 LPR2-CSCT-Comp15	
LPR2	LPR2I	LPR2I-A	LPR2I-A1	LPR2I-CS267 LPR2I-CS268	210		Gillnet			136.6	76.4	48.7	28.2		7.	3 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2	LPR2I	LPR2I-A	LPR2I-A1	LPR2I-CS269	188		Gillnet			134.3	74.5	47.3	27.2	2 40.1	7.2	2 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2	LPR2I	LPR2I-A	LPR2I-A1	LPR2I-CS270	270		Gillnet			106.4		28.4			6.0	D LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2 LPR2	LPR2I LPR2I	LPR2I-A LPR2I-A	LPR2I-A1 LPR2I-A1	LPR2I-CS271 LPR2I-CS272	178 106		Gillnet			134.3 112.5	74.5 55.0	47.3 32.8	27.2		7.	2 LPR2-CSMH-Comp15 3 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15 LPR2-CSCT-Comp15	
	LPR2I	LPR2I-A	LPR2I-A1	LPR2I-CS272 LPR2I-CS273	100		Gillnet			98.5	41.3	22.6				6 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2	LPR2I	LPR2I-A	LPR2I-A2	LPR2I-CS381	92	116 female	Gillnet			94.7	37.4	19.7	17.7	7 14.3	5.4	4 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2	LPR2I	LPR2I-A	LPR2I-A2	LPR2I-CS382	130		Gillnet	Missing left leg		100.4		24.0				7 LPR2-CSMH-Comp15	LPR2-CSCT-Comp15	
LPR2 LPR2	LPR2I LPR2I	LPR2I-A LPR2I-A	LPR2I-A2 LPR2I-A2	LPR2I-CS383 LPR2I-CS384	164 146	159 female	Gillnet	Missing left swimmerette		195.7 138.9	121.3	82.1 50.2			9.4	4 LPR2-CSMT-Comp16 4 LPR2-CSMT-Comp16		
LPR2	LPR2I	LPR2I-A	LPR2I-A2 LPR2I-A3	LPR2I-CS525	208		Gillnet	Damaged right swimmerette		153.3	78.4 90.1	58.9	31.2		7.4	9 LPR2-CSMT-Comp16		
LPR2	LPR2I	LPR2I-A	LPR2I-A3	LPR2I-CS526	198		Gillnet	Missing both swimmerettes		134.3	74.5	47.3	27.2	2 40.1	7.	2		
LPR2	LPR2I	LPR2I-A	LPR2I-A3	LPR2I-CS527	160		Gillnet	Damaged left swimmerette		132.0	72.5	45.8	26.7	7 38.7				
LPR2 LPR2	LPR2I	LPR2I-A LPR2I-A	LPR2I-A4 LPR2I-A4	LPR2I-CS625 LPR2I-CS627	148 164		Gillnet			108.4 123.1	51.1 64.7	29.9 40.0						
LPR2	LPR2I	LPR2I-A	LPR2I-A4	LPR2I-CS627	136		Gillnet	Missing right leg and 2 left legs		173.8	105.7	70.5	35.2			7 LPR2-CSMT-Comp16		
	LPR2I	LPR2I-A	LPR2I-A5	LPR2I-CS743	182	135 male	Gillnet			134.3	74.5	47.3	27.2			2 LPR2-CSMT-Comp16		
LPR2	LPR2I	LPR2I-A	LPR2I-A5	LPR2I-CS744	182		Gillnet	Missing right leg and swimmerette		138.9	78.4	50.2	28.2					
LPR2 LPR2	LPR2I LPR2I	LPR2I-A LPR2I-A	LPR2I-A5 LPR2I-A5	LPR2I-CS747 LPR2I-CS748	132 200		Gillnet			153.3 165.9	90.1 99.8	58.9 66.2	31.2 33.7			9 LPR2-CSMT-Comp16 4 LPR2-CSMT-Comp16		
	LPR2I	LPR2I-A	LPR2I-A5	LPR2I-CS749	182		Gillnet			168.5	101.8	67.6			8.5	5 LPR2-CSMT-Comp16		
LPR2	LPR2I	LPR2I-A	LPR2I-A5	LPR2I-CS751	172		Gillnet			129.7	70.6	44.4			7.0	D LPR2-CSMT-Comp16		
LPR2	LPR2J	LPR2J-A	LPR2J-A1	LPR2J-CS276	226		Gillnet			171.1	103.7	69.1			8.6	6 LPR2-CSMH-Comp17	LPR2-CSCT-Comp17	
LPR2 LPR2	LPR2J LPR2J	LPR2J-A LPR2J-A	LPR2J-A1 LPR2J-A1	LPR2J-CS278 LPR2J-CS280	192 136		Gillnet	Missing right swimmerette; parasites		138.9 114.6	78.4 56.9	50.2 34.2			1.4	4 LPR2-CSMH-Comp17 4 LPR2-CSMH-Comp17	LPR2-CSCT-Comp17 LPR2-CSCT-Comp17	
	LPR2J	LPR2J-A	LPR2J-A2	LPR2J-CS285	218	141 male	Gillnet	wissing right swimmerette, parasites		148.4	86.2	56.0	30.2	2 48.3	7.	7 LPR2-CSMH-Comp17	LPR2-CSCT-Comp17	
LPR2	LPR2J	LPR2J-A	LPR2J-A2	LPR2J-CS386	176		Gillnet	Missing right swimmerette		138.9	78.4				7.4	4 LPR2-CSMH-Comp17	LPR2-CSCT-Comp17	
LPR2 LPR2	LPR2J	LPR2J-A	LPR2J-A2	LPR2J-CS387	184		Gillnet	Missing 2 left legs		158.3	94.0				8.1	LPR2-CSMH-Comp17	LPR2-CSCT-Comp17	
LPR2 LPR2	LPR2J LPR2J	LPR2J-A LPR2J-A	LPR2J-A2 LPR2J-A3	LPR2J-CS390 LPR2J-CS528	190 152		Gillnet	Missing 2 left legs		153.3 192.9	90.1 119.3	58.9 80.7	31.2 38.7			9 LPR2-CSMH-Comp17 3 LPR2-CSMH-Comp17	LPR2-CSCT-Comp17 LPR2-CSCT-Comp17	
LPR2	LPR2J	LPR2J-A	LPR2J-A3	LPR2J-CS529	270	144 male	Gillnet	Damaged left spine		155.8	92.0	60.3			8.0	D LPR2-CSMH-Comp17	LPR2-CSCT-Comp17	
LPR2	LPR2J	LPR2J-A	LPR2J-A3	LPR2J-CS531	224		Gillnet			173.8	105.7	70.5	35.2		8.7	7 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	
LPR2 LPR2	LPR2J LPR2I	LPR2J-A LPR2J-A	LPR2J-A3 LPR2J-A3	LPR2J-CS532 LPR2J-CS533	146 138		Gillnet			129.7 114.6	70.6 56.9	44.4 34.2				LPR2-CSMH-Comp18 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18 LPR2-CSCT-Comp18	
	LPR2J	LPR2J-A LPR2J-A	LPR2J-A3	LPR2J-CS533 LPR2J-CS538	140		Gillnet	Damaged right spine		110.4	53.0			7 25.1	6.3	2 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	
LPR2	LPR2J	LPR2J-A	LPR2J-A3	LPR2J-CS539	184	143 male	Gillnet	Damaged left spine		153.3	90.1	58.9	31.2	2 51.0	7.9	9 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	<u> </u>
	LPR2J	LPR2J-A	LPR2J-A3	LPR2J-CS542	112	115 male	Gillnet			92.8	35.5	18.2	17.3	3 12.9	5.4	4 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	
LPR2 LPR2	LPR2J LPR2I	LPR2J-A	LPR2J-A4	LPR2J-CS630 LPR2J-CS723	140 114		Gillnet	Missing left swimmerette		123.1 120.9	64.7 62.8	40.0 38.6		7 33.3 2 31.9	6.7	7 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18 LPR2-CSCT-Comp18	
	LPR2J	LPR2J-A	LPR2J-A5	LPR2J-CS724	184		Gillnet	Missing both swimmerettes		141.3		51.6				5 LPR2-CSMH-Comp18 5 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	
	LPR2J	LPR2J-A	LPR2J-A5	LPR2J-CS725	200		Gillnet			163.4		64.7		2 56.4	8.3	3 LPR2-CSMH-Comp18	LPR2-CSCT-Comp18	
	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS282	202		Gillnet			163.4		64.7	33.2	2 56.4	8.3	3 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	
LPR2 LPR2	LPR2K LPR2K	LPR2K-A	LPR2K-A1 LPR2K-A1	LPR2K-CS283 LPR2K-CS284	348 276		Gillnet			257.1 210.2	160.3 131.0	111.2 89.4	49.1 41.7		11.3	2 LPR2-CSMH-Comp19 9 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19 LPR2-CSCT-Comp19	
LPR2	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS284 LPR2K-CS287	200		Gillnet			150.9	88.1	89.4 57.4				8 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	
LPR2	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS289	224	149 male	Gillnet			168.5	101.8	67.6	34.2	2 59.1	8.5	5 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	
LPR2	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS290	244		Gillnet	Missing left leg		176.4		72.0		7 63.2	8.8	8 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	
LPR2 LPR2	LPR2K LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS295 LPR2K-CS296	226 134		Gillnet			165.9	99.8 47.2	66.2 27.0			8.4	4 LPR2-CSMH-Comp19 9 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19 LPR2-CSCT-Comp19	
LPR2	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS296 LPR2K-CS297	256		Gillnet			190.1	117.4	79.2				2 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	
LPR2	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS298	250		Gillnet			187.3	115.4	77.8		7 68.7		1 LPR2-CSMH-Comp19	LPR2-CSCT-Comp19	
	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS300	92		Gillnet	Missing right leg		102.4	45.2	25.5	19.7				LPR2-CSCT-Comp19	
	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS301	242		Gillnet			163.4		64.7	33.2			,		
LPR2 LPR2	LPR2K LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS302 LPR2K-CS304	224 140		Gillnet			143.6	82.3 55.0	53.1 32.8	29.2					
	LPR2K	LPR2K-A		LPR2K-CS304 LPR2K-CS305	290		Gillnet			192.9	119.3	80.7						
	LPR2K	LPR2K-A		LPR2K-CS307	210		Gillnet			163.4	97.9	64.7				-		
	LPR2K	LPR2K-A		LPR2K-CS308	168		Gillnet			127.5		42.9				,	LDD2 CCCT 2	
	LPR2K LPR2K	LPR2K-A LPR2K-A		LPR2K-CS309 LPR2K-CS310	122 210		Gillnet	Damaged right swimmerette		108.4	51.1 113.5	29.9 76.3				1 LPR2-CSMH-Comp20 D LPR2-CSMH-Comp20	LPR2-CSCT-Comp20 LPR2-CSCT-Comp20	
L: N2	LINZK	EF NZN-A	Er nzn-M1	U 112N-C3310	210	TOO ITIGIE	G.IIIIEC	Danial Per Light Smithhetette		104.0	115.5	/0.5	37.2	37.3	9.0	Li na-compau	a na-coci-compa0	

Table A2. Proposed composite samples for blue crab

	. торозс	u compositi	e samples it	or blue crab															
Reach	Location ID	Trap ID	Trap Attempt ID	Specimen ID	Weight	Length (mm) Ge	ender	Collection Method		for exclusion from composite?	Estimated WB weight	Estimated soft tissue WB weight	Estimated Muscle/HP weight	Estimated Carcass weight	Estimated Muscle- only weight	Estimated HP-only weight	Composite ID (tissue type 1)	Composite ID (tissue type 2)	Composite Notes
	PR2K	LPR2K-A		LPR2K-CS311	278			Gillnet			173.8	105.7	70.5	35.2	61.9		LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	
	PR2K PR2K	LPR2K-A LPR2K-A		LPR2K-CS313 LPR2K-CS392	232 154	156 mal		Gillnet Gillnet	Missing 2 right legs		187.3 176.4	115.4 107.6	77.8 72.0	37.7 35.7	68.7 63.2	9.1	LPR2-CSMH-Comp20 LPR2-CSMH-Comp20	LPR2-CSCT-Comp20 LPR2-CSCT-Comp20	
	PR2K	LPR2K-A		LPR2K-CS394	220			Gillnet	THISSING 2 TIGHT ICES		163.4	97.9	64.7	33.2	56.4	8.3	LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	
	PR2K	LPR2K-A	LPR2K-A2	LPR2K-CS395	212			Gillnet			165.9	99.8	66.2	33.7	57.8	8.4	LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A2 LPR2K-A2	LPR2K-CS397 LPR2K-CS398	214 86	144 mal		Gillnet Gillnet	Missing left leg		155.8 94.7	92.0 37.4	60.3 19.7	31.7 17.7	52.3 14.3		LPR2-CSMH-Comp20 LPR2-CSMT-Comp21	LPR2-CSCT-Comp20 LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A		LPR2K-CS398 LPR2K-CS400	176			Gillnet	Missing left leg		136.6	76.4	48.7	27.7	41.5		LPR2-CSM1-Comp21 LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	
	PR2K	LPR2K-A		LPR2K-CS401	254	151 mal		Gillnet			173.8	105.7	70.5	35.2	61.9	8.7	LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	
	PR2K	LPR2K-A		LPR2K-CS403	222			Gillnet			165.9	99.8	66.2	33.7	57.8		LPR2-CSMH-Comp20	LPR2-CSCT-Comp20	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A2 LPR2K-A2	LPR2K-CS404 LPR2K-CS405	266 152	152 mal		Gillnet Gillnet			176.4 123.1	107.6 64.7	72.0 40.0	35.7 24.7	63.2 33.3	8.8 6.7			
	PR2K	LPR2K-A	LPR2K-A2	LPR2K-CS405	200	150 mal		Gillnet	Missing left leg		171.1	103.7	69.1	34.7	60.5	8.6			
	PR2K	LPR2K-A		LPR2K-CS407	178	139 mal		Gillnet			143.6	82.3	53.1	29.2	45.5	7.6			
	PR2K	LPR2K-A	LPR2K-A2	LPR2K-CS408	96	119 fem		Gillnet	Missing 2 left legs		100.4	43.3	24.0	19.2	18.3			LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A3 LPR2K-A3	LPR2K-CS546 LPR2K-CS547	190 202	144 mal	le l	Gillnet Gillnet			155.8 150.9	92.0 88.1	60.3 57.4	31.7 30.7	52.3 49.6	8.0 7.8			
	PR2K	LPR2K-A		LPR2K-CS548	230	150 mal	le (Gillnet	Missing right leg		171.1	103.7	69.1	34.7	60.5		LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K	LPR2K-A	LPR2K-A3	LPR2K-CS549	232			Gillnet			179.1	109.6	73.4	36.2	64.6	8.8	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K	LPR2K-A		LPR2K-CS550	252 234			Gillnet			210.2	131.0	89.4	41.7 36.2	79.5	9.9	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A3 LPR2K-A3	LPR2K-CS551 LPR2K-CS552	234 158		le (Gillnet			179.1 132.0	109.6 72.5	73.4 45.8	36.2 26.7	64.6 38.7	8.8 7.1	LPR2-CSMT-Comp21 LPR2-CSMT-Comp21	LPR2-CSHT-Comp21 LPR2-CSHT-Comp21	
	PR2K	LPR2K-A	LPR2K-A3	LPR2K-CS553	172			Gillnet			158.3	94.0	61.8	32.2	53.7	8.1	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
.PR2 L	PR2K	LPR2K-A	LPR2K-A3	LPR2K-CS606	204	142 mal	le (Gillnet			150.9	88.1	57.4	30.7	49.6	7.8	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K	LPR2K-A	LPR2K-A4	LPR2K-CS634	148 236	129 mal		Gillnet	Malada Infa In		120.9 198.6	62.8 123.2	38.6 83.6	24.2	31.9 74.1	6.6	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A4 LPR2K-A4	LPR2K-CS635 LPR2K-CS636	236 248	160 mal		Gillnet Gillnet	Missing left leg		198.6 165.9	123.2 99.8	83.6 66.2	39.7 33.7	74.1 57.8	9.5	LPR2-CSMT-Comp21 LPR2-CSMT-Comp21	LPR2-CSHT-Comp21 LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A		LPR2K-CS637	112			Gillnet			92.8	35.5	18.2	17.3	12.9	5.4	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
PR2 L	PR2K	LPR2K-A	LPR2K-A4	LPR2K-CS639	134	123 mal	le (Gillnet			108.4	51.1	29.9	21.2	23.8	6.1	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K	LPR2K-A		LPR2K-CS640	116			Gillnet			104.4	47.2	27.0	20.2	21.1	5.9	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A4 LPR2K-A5	LPR2K-CS641 LPR2K-CS712	174 226	134 mal		Gillnet Gillnet			132.0 181.8	72.5 111.5	45.8 74.9	26.7 36.7	38.7 65.9	7.1	LPR2-CSMT-Comp21 LPR2-CSMT-Comp21	LPR2-CSHT-Comp21 LPR2-CSHT-Comp21	
	PR2K PR2K	LPR2K-A LPR2K-A	LPR2K-A5 LPR2K-A5	LPR2K-CS712 LPR2K-CS715	168			Gillnet			181.8	76.4	74.9 48.7	27.7	41.5	7 3	LPR2-CSMT-Comp21 LPR2-CSMT-Comp21	LPR2-CSHT-Comp21 LPR2-CSHT-Comp21	
PR2 L	PR2K	LPR2K-A	LPR2K-A5	LPR2K-CS716	156	135 mal	le (Gillnet			134.3	74.5	47.3	27.2	40.1	7.2	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
.PR2 L	PR2K	LPR2K-A	LPR2K-A5	LPR2K-CS717	224	145 mal	le (Gillnet			158.3	94.0	61.8	32.2	53.7	8.1	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2K	LPR2K-A		LPR2K-CS718	300	162 mal		Gillnet			204.3	127.1	86.5	40.7	76.8	9.7	LPR2-CSMT-Comp21	LPR2-CSHT-Comp21	
	PR2L PR2L	LPR2L-A LPR2L-A	LPR2L-A1 LPR2L-A1	LPR2L-CS364 LPR2L-CS380	148 200			Crab Trap Crab Trap	Left spine broken		125.3 134.3	66.7 74.5	41.5	25.2 27.2	34.7 40.1		LPR2-CSMH-Comp14 LPR2-CSMH-Comp14	LPR2-CSCT-Comp14 LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother 2B and 2L located adjacent to eachother
	PR2L	LPR2L-A		LPR2L-CS497	152			Crab Trap	Left spille broken		155.8	92.0	60.3	31.7	52.3		LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother
	PR2L	LPR2L-C	LPR2L-C2	LPR2L-CS499	104	119 fem	nale (Crab Trap			100.4	43.3	24.0	19.2	18.3	5.7	LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother
	PR2L	LPR2L-A	LPR2L-A4	LPR2L-CS661	244	160 mal	le (Crab Trap	Missing right leg		198.6	123.2	83.6	39.7	74.1	9.5	LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother
	PR2L	LPR2L-A		LPR2L-CS721	138			Crab Trap			112.5	55.0	32.8	22.2	26.5		LPR2-CSMH-Comp14	LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother
	PR2L PR2L	LPR2L-C LPR2L-C	LPR2L-C5 LPR2L-C5	LPR2L-CS726 LPR2L-CS727	248 104	151 mal		Crab Trap Crab Trap			173.8 96.6	105.7 39.4	70.5 21.1	35.2 18.2	61.9 15.6	8.7	LPR2-CSMH-Comp14 LPR2-CSMH-Comp14	LPR2-CSCT-Comp14 LPR2-CSCT-Comp14	2B and 2L located adjacent to eachother 2B and 2L located adjacent to eachother
	PR2M	LPR2M-B	LPR2M-B1	LPR2M-CS365	110			Crab Trap			98.5	41.3	22.6	18.7	17.0	5.6	LPR2-CSMT-Comp22	LFR2-C3C1-C0IIIp14	25 and 25 located adjacent to eachother
PR2 L	PR2M	LPR2M-B	LPR2M-B1	LPR2M-CS366	162	149 fem	nale	Crab Trap			168.5	101.8	67.6	34.2	59.1	8.5	LPR2-CSMT-Comp22		
	PR2M	LPR2M-A		LPR2M-CS430	114			Crab Trap	Missing left leg		146.0	84.2	54.5	29.7	46.9		LPR2-CSMT-Comp22		
	PR2M PR2M	LPR2M-B LPR2M-C		LPR2M-CS438 LPR2M-CS597	116 158			Crab Trap Crab Trap			98.5 132.0	41.3 72.5	22.6 45.8	18.7 26.7	17.0 38.7		LPR2-CSMT-Comp22 LPR2-CSMT-Comp22		
	PR2M	LPR2M-A		LPR2M-CS598	150			Crab Trap			181.8	111.5	74.9	36.7	65.9		LPR2-CSMT-Comp22		
	PR2M	LPR2M-B		LPR2M-CS599	192			Crab Trap	Missing left leg		125.3	66.7	41.5	25.2	34.7		LPR2-CSMT-Comp22		
	PR2M	LPR2M-B		LPR2M-CS601	158			Crab Trap	Missing right leg		187.3	115.4	77.8	37.7	68.7	9.1	LPR2-CSMT-Comp22		
	PR2M PR2M	LPR2M-C LPR2M-B		LPR2M-CS660 LPR2M-CS662	198 212	138 mal		Crab Trap Crab Trap	Missing 2 right legs, 1 left leg		141.3 118.8	80.3 60.8	51.6 37.1	28.7 23.7	44.2 30.6	7.5	LPR2-CSMT-Comp22 LPR2-CSMT-Comp22		
	PR2M	LPR2M-C	LPR2M-C5	LPR2M-CS720	122			Crab Trap	Missing right spine		110.4	53.0	31.3	21.7	25.1	6.2	LPR2-CSMT-Comp22		
	PR2N	LPR2N-C		LPR2N-CS363	132			Crab Trap			110.4	53.0	31.3	21.7	25.1	6.2	LPR2-CSMT-Comp23		
	PR2N	LPR2N-A		LPR2N-CS368	140			Crab Trap			120.9	62.8	38.6	24.2	31.9	6.6	LPR2-CSMT-Comp23		
	PR2N PR2N	LPR2N-A		LPR2N-CS369 LPR2N-CS370	122			Crab Trap Crab Trap	Left spine broken		106.4	49.1 97.9	28.4 64.7	20.7	22.4		LPR2-CSMT-Comp23		
	PR2N PR2N	LPR2N-A LPR2N-C		LPR2N-CS370 LPR2N-CS371	156 198	147 rem		Crab Trap	Lett spille brokell		163.4 155.8	97.9	60.3	33.2 31.7	56.4 52.3	8.3 8.0	LPR2-CSMT-Comp23 LPR2-CSMT-Comp23		
PR2 L	PR2N	LPR2N-A	LPR2N-A1	LPR2N-CS372	160	135 mal	le (Crab Trap	Left spine broken		134.3	74.5	47.3	27.2	40.1	7.2	LPR2-CSMT-Comp23		
	PR2N	LPR2N-A		LPR2N-CS373	162	138 mal		Crab Trap	Missing right leg		141.3	80.3	51.6	28.7	44.2	7.5	LPR2-CSMT-Comp23		
	PR2N PR2N	LPR2N-B		LPR2N-CS374 LPR2N-CS377	156 196			Crab Trap Crab Trap	Right spine broken		129.7 163.4	70.6 97.9	44.4 64.7	26.2	37.4 56.4		LPR2-CSMT-Comp23 LPR2-CSMT-Comp23		
	PR2N PR2N	LPR2N-A LPR2N-C		LPR2N-CS604	216			Crab Trap			165.9	97.9	66.2	33.2 33.7	57.8	8.3	LPR2-CSMT-Comp23		
	PR2N	LPR2N-B	LPR2N-B4	LPR2N-CS658	198	145 mal	le (Crab Trap			158.3	94.0	61.8	32.2	53.7	8.1			
	PR2N PR2N	LPR2N-B		LPR2N-CS729	112			Crab Trap			98.5	41.3	22.6	18.7	17.0	5.6			
	PR2N PR2N	LPR2N-C		LPR2N-CS738 LPR2N-CS739	166 86		ie (Crab Trap Crab Trap	Missing right leg; right spine damaged		116.7 100.4	58.9 43.3	35.7 24.0	23.2 19.2	29.2 18.3	6.5	LPR2-CSMT-Comp23		
	PR3G	LPR3G-C		LPR3G-CS121	104			Crab Trap Crab Trap	Right spine broken		92.8	43.3 35.5	18.2	17.3	12.9		LPR3-CSM1-Comp23	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 mi
PR3 L	PR3H	LPR3H-A	LPR3H-A1	LPR3H-CS015	82	117 inde	etermin	Crab Trap	5		96.6	39.4	21.1	18.2	15.6	5.5			not included in Comp 26; max sample size = 11
	PR3H	LPR3H-C		LPR3H-CS061	100			Crab Trap			91.0	33.5	16.8	16.8	11.5	5.3	LPR3-CSMH-Comp26	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 mi
	PR3H PR3H	LPR3H-B		LPR3H-CS077 LPR3H-CS120	134 140	132 mal		Crab Trap Crab Trap			127.5 127.5	68.6 68.6	42.9 42.9	25.7 25.7	36.0 36.0	6.9	LPR3-CSMH-Comp26 LPR3-CSMH-Comp26	LPR3-CSCT-Comp26 LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 mi LPR3N, LPR3G, and LPR3H located within approximately 0.5 mi
	PR3H PR3M	LPR3M-B LPR3M-A		LPR3H-CS120 LPR3M-CS007	110			Gillnet			127.5	64.7	42.9	25.7	36.0		LPR3-CSMH-Comp26 LPR3-CSMH-Comp24	LPR3-CSCT-Comp26 LPR3-CSCT-Comp24	LE NOIN, LE NOO, AND LE NOR IOCATED WITHIN APPROXIMATELY U.5 MI
	PR3M	LPR3M-A		LPR3M-CS007	112			Gillnet			118.8	60.8	37.1	23.7	30.6	6.5	LPR3-CSMH-Comp24	LPR3-CSCT-Comp24	
	PR3M	LPR3M-A		LPR3M-CS010	80	115 mal	le (Gillnet			92.8	35.5	18.2	17.3	12.9	5.4	LPR3-CSMH-Comp24	LPR3-CSCT-Comp24	
	PR3M PR3M	LPR3M-A		LPR3M-CS017 LPR3M-CS018	80 94	117 mal		Gillnet			96.6 94.7	39.4 37.4	21.1 19.7	18.2 17.7	15.6 14.3	5.5	LPR3-CSMH-Comp24	LPR3-CSCT-Comp24 LPR3-CSCT-Comp24	
	PR3M PR3M	LPR3M-A		LPR3M-CS018 LPR3M-CS019	116			Gillnet			138.9	78.4	19.7 50.2	28.2	14.3 42.8	7.4	LPR3-CSMH-Comp24 LPR3-CSMH-Comp24	LPR3-CSC1-Comp24 LPR3-CSCT-Comp24	
	PR3M	LPR3M-A	LPR3M-A2	LPR3M-CS020	84	117 mal		Gillnet			96.6	39.4	21.1	18.2	15.6	5.5	LPR3-CSMT-Comp25	Coc. Comp24	
	PR3M	LPR3M-A	LPR3M-A2	LPR3M-CS022	70	115 fem	nale	Gillnet	Immature		92.8	35.5	18.2	17.3	12.9	5.4	LPR3-CSMH-Comp24	LPR3-CSCT-Comp24	
	PR3M	LPR3M-A	LPR3M-A2	LPR3M-CS023	72	117 mal	le (Gillnet			96.6	39.4	21.1	18.2	15.6	5.5	LPR3-CSMT-Comp25		
	PR3M PR3M	LPR3M-A		LPR3M-CS024 LPR3M-CS025	82	121 fem		Gillnet Gillnet			104.4 92.8	47.2 35.5	27.0 18.2	20.2 17.3	21.1 12.9	5.9	LPR3-CSMH-Comp24	LPR3-CSCT-Comp24	
	PR3M PR3M	LPR3M-A LPR3M-A		LPR3M-CS025 LPR3M-CS026	106 96	115 mal		Gillnet			104.4	35.5 47.2	18.2 27.0	20.2	21.1	5.4	LPR3-CSMT-Comp25 LPR3-CSMT-Comp25		
	PR3M	LPR3M-A		LPR3M-CS027	80	116 fem		Gillnet			94.7	37.4	19.7	17.7	14.3	5.4	LPR3-CSMT-Comp25		
	PR3M	LPR3M-A		LPR3M-CS043	92			Gillnet	Missing swimmerettes and legs		123.1	64.7	40.0	24.7	33.3	6.7	LPR3-CSMT-Comp25		
	PR3M PR3M	LPR3M-A	LPR3M-A4	LPR3M-CS079	132		le (Gillnet	Missing part of swimmerette		129.7	70.6	44.4	26.2	37.4	7.0	LPR3-CSMT-Comp25		
1113	PR3M PR3N	LPR3M-A LPR3N-A		LPR3M-CS110 LPR3N-CS033	84 84			Gillnet Gillnet			91.0 102.4	33.5 45.2	16.8 25.5	16.8 19.7	11.5 19.7		LPR3-CSMT-Comp25 LPR3-CSMH-Comp26	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 m
	PR3N PR3N	LPR3N-A LPR3N-A	LPR3N-A2	LPR3N-CS033 LPR3N-CS044	90	120 mai	le (Gillnet			98.5	45.2	25.5	19.7	19.7	5.8	LPR3-CSMH-Comp26	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 m LPR3N, LPR3G, and LPR3H located within approximately 0.5 m
					108			Gillnet					25.5	19.7	19.7	5.0	LPR3-CSMH-Comp26	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 m
PR3 L	PR3N	LPR3N-A	LPR3N-A3	LPR3N-CS045	108	120 IIIdi	ie i	Gillilet			102.4	45.2	25.5	19.7	18.3		LPR3-CSMH-Comp26		LPR3N, LPR3G, and LPR3H located within approximately 0.5 mil

Table A2. Proposed composite samples for blue crab

			e samples ic	r blue crab															
Reach	ocation	Tran ID	Trap Attempt ID	Specimen ID	Weight	Length (mm)		Collection	Reason for exclusion Comments composite?		Estimat soft tiss	ue Mus	imated E scle/HP reight	Carcass	Estimated Muscle- only weight	Estimated HP-only Co	mposite ID (tissue type 1)	Composite ID (tissue type 2)	Composite Notes
	PR3N			LPR3N-CS051	98			Gillnet	composite:	94	7 3	7.4	19.7	17.7	14.3			LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 mile:
	PR3N	LPR3N-A		LPR3N-CS075	216		68 male	Gillnet		222		8.8	95.2	43.6	85.0	10.2			outside of size range
PR3 LI	PR3N	LPR3N-A	LPR3N-A4	LPR3N-CS078	94	1 11	19 female	Gillnet	Missing part of right swimmerette	100	4 4	3.3	24.0	19.2	18.3	5.7 LPR3	3-CSMH-Comp26	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 mile
	PR3N	LPR3N-A		LPR3N-CS112	110	12	23 male	Gillnet		108	4 5	1.1	29.9	21.2	23.8	6.1 LPR3	3-CSMH-Comp26	LPR3-CSCT-Comp26	LPR3N, LPR3G, and LPR3H located within approximately 0.5 mile
	PR30	LPR3O-A		LPR3O-CS002	128		36 male	Gillnet		136		6.4	48.7	27.7	41.5		3-CSMH-Comp27	LPR3-CSCT-Comp27	
	PR30	LPR3O-A		LPR3O-CS003	159		51 male	Gillnet		173		5.7	70.5	35.2	61.9			LPR3-CSCT-Comp27	
	PR3O PR3O	LPR3O-A		LPR3O-CS034 LPR3O-CS036	98 74		17 male 16 female	Gillnet		96		9.4 7.4	21.1	18.2 17.7	15.6 14.3	5.5 LPR3		LPR3-CSCT-Comp27	
		LPR3O-A		LPR3O-CS036 LPR3O-CS039				Gillnet		106		9.1	28.4	20.7	22.4			LPR3-CSCT-Comp27	
		LPR3O-A		LPR3O-CS039	126 90	1/2	46 male	Gillnet		160		5.9	63.3	32.7	55.1			LPR3-CSCT-Comp27	
		LPR3O-A		LPR3O-CS062	112		33 male	Gillnet		129		0.6	44.4	26.2	37.4			LPR3-CSCT-Comp27	
	PR30	LPR3O-A		LPR3O-CS063	234			Gillnet		222		8.8	95.2	43.6	85.0		3-CSMH-Comp27	LPR3-CSCT-Comp27	
PR3 LI	PR30	LPR3O-A	LPR3O-A3	LPR3O-CS065	132	2 15	51 female	Gillnet		173	8 10	5.7	70.5	35.2	61.9			LPR3-CSCT-Comp27	
PR3 LI	PR30	LPR3O-A		LPR3O-CS069	160		41 male	Gillnet	Missing left eye, damaged last 2 right legs	148	4 8	6.2	56.0	30.2	48.3			LPR3-CSCT-Comp27	
		LPR3O-A		LPR3O-CS070	124			Gillnet		114		6.9	34.2	22.7	27.9			LPR3-CSCT-Comp28	
	PR30	LPR3O-A		LPR3O-CS081	134			Gillnet		146		4.2	54.5	29.7	46.9		3-CSMH-Comp28	LPR3-CSCT-Comp28	
		LPR3O-A		LPR3O-CS083	140			Gillnet		127		8.6	42.9	25.7	36.0		3-CSMH-Comp28	LPR3-CSCT-Comp28	
	PR30 PR30	LPR3O-A LPR3O-A		LPR3O-CS086 LPR3O-CS087	90 138			Gillnet	Detached right claw, included	106 114		9.1 6.9	28.4 34.2	20.7	22.4		3-CSMH-Comp28 3-CSMH-Comp28	LPR3-CSCT-Comp28 LPR3-CSCT-Comp28	
	PR30	LPR3O-A		LPR3O-CS087	134			Gillnet		114		8.6	42.9	25.7	36.0		3-CSMH-Comp28	LPR3-CSCT-Comp28	
	PR30	LPR3O-A		LPR3O-CS090	134		28 male	Gillnet		118		0.8	37.1	23.7	30.6		3-CSMH-Comp28	LPR3-CSCT-Comp28	
	PR30	LPR3O-A		LPR3O-CS091	96		14 female	Gillnet		91		3.5	16.8	16.8	11.5		3-CSMH-Comp28	LPR3-CSCT-Comp28	
PR3 LI	PR30	LPR3O-A		LPR3O-CS092	202			Gillnet		160		5.9	63.3	32.7	55.1	8.2 LPR3		LPR3-CSCT-Comp28	
PR3 LI	PR30	LPR3O-A	LPR3O-A5	LPR3O-CS093	214	1 15	51 male	Gillnet		173	8 10	5.7	70.5	35.2	61.9	8.7 LPR3	3-CSMT-Comp29		
	PR3O	LPR3O-A	LPR3O-A5	LPR3O-CS094	186		46 male	Gillnet		160		5.9	63.3	32.7	55.1	8.2 LPR3	3-CSMT-Comp29		
	PR3O	LPR3O-A		LPR3O-CS096	222		47 male	Gillnet		163		7.9	64.7	33.2	56.4	8.3 LPR3	3-CSMT-Comp29		
		LPR3O-A	LPR3O-A5	LPR3O-CS097	226		52 male	Gillnet		176		7.6	72.0	35.7	63.2	8.8 LPR3	3-CSMT-Comp29		
	PR30	LPR3O-A		LPR3O-CS099	80		16 female	Gillnet		94		7.4	19.7	17.7	14.3	5.4 LPR3	3-CSMH-Comp28	LPR3-CSCT-Comp28	
	PR30 PR30	LPR3O-A LPR3O-A	LPR3O-A5 LPR3O-A5	LPR3O-CS100 LPR3O-CS102	96 108		24 female 26 female	Gillnet		110 114		3.0 6.9	31.3	21.7 22.7	25.1 27.9	6.2 LPR3	B-CSMT-Comp29 B-CSMT-Comp29		
	PR30 PR30	LPR3O-A LPR3O-A		LPR3O-CS102 LPR3O-CS106	108 170			Gillnet		114		6.9 5.0	34.2	22.7	27.9		3-CSMT-Comp29 3-CSMT-Comp29		
	PR3O	LPR3O-A		LPR3O-CS106 LPR3O-CS107	170		25 maie 37 maie	Gillnet		112		5.0 8.4	50.2	28.2	26.5 42.8		3-CSM1-Comp29 3-CSMT-Comp29		
	PR4F	LPR4F-A		LPR4F-CS158	140		37 maie 38 male	Crab Trap		138		0.3	51.6	28.2	44.2		I-CSMH-Comp29	LPR4-CSCT-Comp30	composite mass < 150 g; 4F and 4O near each other
	PR4G	LPR4G-B		LPR4G-CS153	100			Crab Trap		123		4.7	40.0	24.7	33.3		I-CSMH-Comp31	LPR4-CSCT-Comp30	composite mass < 150 g, 41 and 40 flear each other
		LPR4G-B		LPR4G-CS877	206			Crab Trap		184		3.5	76.3	37.2	67.3			LPR4-CSCT-Comp31	composite mass < 150 g
	PR4G	I PR4G-B		IPR4G-CS878	186			Crab Trap		216		4.9	92.3	42.6	82.3	10.0 LPR4	I-CSMH-Comp31	LPR4-CSCT-Comp31	composite mass < 150 g
PR4 LI	PR4G	LPR4G-B	LPR4G-B10	LPR4G-CS890	144			Crab Trap	Left claw included	148		6.2	56.0	30.2	48.3	7.7 LPR4	I-CSMH-Comp31	LPR4-CSCT-Comp31	composite mass < 150 g
	PR4H	LPR4H-A		LPR4H-CS872	166		40 male	Crab Trap	Missing left leg	146		4.2	54.5	29.7	46.9	7.7 LPR4	I-CSMH-Comp32	LPR4-CSCT-Comp32	4H and 4L located adjacent to each other
	PR4L	LPR4L-A		LPR4L-CS126	68		15 male	Gillnet	Missing left swimmerette	92		5.5	18.2	17.3	12.9			LPR4-CSCT-Comp32	4H and 4L located adjacent to each other
	PR4L	LPR4L-A		LPR4L-CS127	116		48 female	Gillnet	Mature	165		9.8	66.2	33.7	57.8		I-CSMH-Comp32	LPR4-CSCT-Comp32	4H and 4L located adjacent to each other
	PR4L	LPR4L-A		LPR4L-CS825	150		39 male	Gillnet		143		2.3	53.1	29.2	45.5			LPR4-CSCT-Comp32	4H and 4L located adjacent to each other
	PR4L	LPR4L-A		LPR4L-CS826	138		27 male	Gillnet		116		8.9	35.7	23.2	29.2		I-CSMH-Comp32	LPR4-CSCT-Comp32	4H and 4L located adjacent to each other
	PR4L PR4O	LPR4L-A LPR4O-A		LPR4L-CS844	142		36 male	Gillnet		136		6.4	48.7	27.7	41.5			LPR4-CSCT-Comp32	4H and 4L located adjacent to each other
	PR40	LPR4O-A		LPR4O-CS130 LPR4O-CS131	130 82		36 male 18 female	Gillnet		136 98		6.4 1.3	48.7 22.6	27.7 18.7	41.5 17.0		I-CSMH-Comp30 I-CSMH-Comp30	LPR4-CSCT-Comp30 LPR4-CSCT-Comp30	composite mass < 150 g; 4F and 4O near each other composite mass < 150 g; 4F and 4O near each other
	PR40	LPR4O-A		LPR40-CS131	104		25 male	Gillnet		112		5.0	32.8	22.2	26.5		I-CSMH-Comp30	LPR4-CSCT-Comp30	composite mass < 150 g; 4F and 4O near each other
	PR40	I PR4O-A		LPR4O-CS843	128			Gillnet	Missing right swimmerette	173	8 10	5.7	70.5	35.2	61.9	8.7 LPR4	I-CSMH-Comp30	LPR4-CSCT-Comp30	composite mass < 150 g; 4F and 4O near each other
PR4 LI	PR4P	LPR4P-A	LPR4P-A1	LPR4P-CS132	24	1 11	15 female	Gillnet	Broken right spine; left claw detached (included)	92	8 3	5.5	18.2	17.3	12.9	5.4 LPR4	I-CSMH-Comp33	LPR4-CSCT-Comp33	composite mass < 150 g; composite sample contains one crab th
	PR4P	LPR4P-A		LPR4P-CS133	112	2 13		Gillnet		125		6.7	41.5	25.2	34.7	6.8 LPR4	I-CSMH-Comp33	LPR4-CSCT-Comp33	composite mass < 150 g; composite sample contains one crab th
	PR4P	LPR4P-A		LPR4P-CS141	110			Gillnet	Missing 2 left legs	116		8.9	35.7	23.2	29.2		I-CSMH-Comp33	LPR4-CSCT-Comp33	composite mass < 150 g; composite sample contains one crab th
	PR4P	LPR4P-A		LPR4P-CS858	212			Gillnet		222		8.8	95.2	43.6	85.0			LPR4-CSCT-Comp33	composite mass < 150 g; composite sample contains one crab th
	PR4P	LPR4P-A		LPR4P-CS859	122		23 male	Gillnet		108		1.1	29.9	21.2	23.8		I-CSMH-Comp33	LPR4-CSCT-Comp33	composite mass < 150 g; composite sample contains one crab the
	PR5E PR5E	LPR5E-A		LPR5E-CS122 LPR5E-CS857	106 86			Gillnet		102 102		5.2	25.5	19.7 19.7	19.7 19.7	5.8 LPR5	-CSMH-Comp34 -CSMH-Comp34	LPR5-CSCT-Comp34	SE and SM located near each other SE and SM located near each other
	PR5J	LPR5J-B		LPR5E-CS857 LPR5J-CS148	96		27 male	Trotline		102		8.9	35.7	23.2	29.2	5.8 LPRS	G-CSMT-Comp36	LPR5-CSCT-Comp34	5J and 5O located near each other
		LPR5M-A		LPR5M-CS152	94			Crab Trap		102		5.2	25.5	19.7	19.7	5.8 LPRS	G-CSMH-Comp34	LPR5-CSCT-Comp34	5E and 5M located near each other
	PR5M	LPR5M-C		LPR5M-CS157	70			Crab Trap		146		4.2	54.5	29.7	46.9	7.7 LPR9	G-CSMH-Comp34	LPR5-CSCT-Comp34	5E and 5M located near each other
	PR5M	LPR5M-C	LPR5M-C5	LPR5M-CS166	84			Crab Trap		102		5.2	25.5	19.7	19.7	5.8 LPR5	-CSMH-Comp34	LPR5-CSCT-Comp34	5E and 5M located near each other
PR5 LI	PR5M	LPR5M-B	LPR5M-B3	LPR5M-CS752	100	12	23 male	Crab Trap	trap lost on 8/19/09 was recovered	108	4 5	1.1	29.9	21.2	23.8	6.1 LPR5	-CSMH-Comp34	LPR5-CSCT-Comp34	5E and 5M located near each other
		LPR5M-B		LPR5M-CS889	136			Crab Trap	Missing left leg	136		6.4	48.7	27.7	41.5		-CSMH-Comp34	LPR5-CSCT-Comp34	5E and 5M located near each other
	PR5O	LPR5O-C		LPR5O-CS160	130	13		Crab Trap		141		0.3	51.6	28.7	44.2	7.5 LPR5	-CSMH-Comp35	LPR5-CSCT-Comp35	
	PR50	LPR5O-A		LPR5O-CS829	110			Crab Trap		129		0.6	44.4	26.2	37.4			LPR5-CSCT-Comp35	
		LPR5O-A		LPR5O-CS831	186			Crab Trap		168		1.8	67.6	34.2	59.1			LPR5-CSCT-Comp35	
		LPR5O-B		LPR5O-CS832 LPR5O-CS834	158 80			Crab Trap Crab Trap	Missing 2 right legs	150 91		8.1 3.5	57.4 16.8	30.7 16.8	49.6 11.5		S-CSMH-Comp35 S-CSMT-Comp36	LPR5-CSCT-Comp35	51 and 50 located near each other
		LPRSO-B		LPR5U-CS834 LPR5O-CS835	120			Crab Trap	I TIGHT ICES	120		2.8	38.6	24.2	31.9		-CSM1-Comp36 -CSMH-Comp35	LPR5-CSCT-Comp35	Some So located freat each other
		LPR5O-A		LPR50-CS848	88			Crab Trap		91		3.5	16.8	16.8	11.5			LPR5-CSCT-Comp35	
		LPR5O-B		LPR5O-CS862	114			Crab Trap		136		6.4	48.7	27.7	41.5			LPR5-CSCT-Comp35	
PR5 LI	PR5O	LPR5O-A	LPR5O-A8	LPR5O-CS867	170) 14	44 male	Crab Trap		155	8 9	2.0	60.3	31.7	52.3	8.0 LPR5	-CSMT-Comp36		5J and 5O located near each other
PR5 LI	PR5O	LPR5O-B		LPR5O-CS870	110	12	24 male	Crab Trap		110	4 5	3.0	31.3	21.7	25.1		-CSMT-Comp36		5J and 5O located near each other
	PR5O	LPR5O-A		LPR5O-CS881	86			Crab Trap		112		5.0	32.8	22.2	26.5		-CSMT-Comp36		5J and 5O located near each other
	PR5O	LPR5O-A		LPR5O-CS883	170			Crab Trap		146		4.2	54.5	29.7	46.9		-CSMT-Comp36		5J and 5O located near each other
	PR6F	LPR6F-A	LPR6F-A2		170			Crab Trap		181		1.5	74.9	36.7	65.9		-CSMH-Comp37		
		LPR6F-A		LPR6F-CS198	118			Crab Trap		132		2.5	45.8	26.7	38.7		-CSMH-Comp37		
	PR6F	LPR6F-B		LPR6F-CS199	96 240			Crab Trap		112		5.0	32.8	22.2	26.5		-CSMH-Comp37		
	PR6F	LPR6F-B		LPR6F-CS211 LPR6F-CS221	240			Crab Trap Crab Trap		228 184		2.7 3.5	98.1 76.3	44.6	87.7 67.3		G-CSMH-Comp37		
		LPR6F-A LPR6F-A		LPR6F-CS221 LPR6F-CS249	204			Crab Trap Crab Trap		184 190		7.4	76.3 79.2	37.2 38.2	67.3 70.0		S-CSMT-Comp40 S-CSMT-Comp40		
	PR6F	LPR6F-A		LPR6F-CS249 LPR6F-CS254	152			Crab Trap		190		8.6	42.9	25.7	36.0		S-CSMT-Comp40		
	PR6F	LPR6F-A		LPR6F-CS840	106			Crab Trap		104		7.2	27.0	20.2	21.1		G-CSMH-Comp38		
	PR6F	LPR6F-B		LPR6F-CS841	162			Crab Trap		132		2.5	45.8	26.7	38.7		6-CSMH-Comp38		
	PR6F	LPR6F-A	LPR6F-A7	LPR6F-CS849	174			Crab Trap		155		2.0	60.3	31.7	52.3	8.0 LPR6	-CSMH-Comp38		
	PR6F	LPR6F-A	LPR6F-A8	LPR6F-CS865	104	1 12		Crab Trap		106		9.1	28.4	20.7	22.4	6.0 LPR6	G-CSMH-Comp38		
	PR6F	LPR6F-A		LPR6F-CS866	146			Crab Trap		148		6.2	56.0	30.2	48.3		-CSMT-Comp39		
PR6 LI	PR6F	LPR6F-A		LPR6F-CS871	186			Crab Trap		187		5.4	77.8	37.7	68.7	9.1 LPR6	-CSMT-Comp39		
	PR6F	LPR6F-A		LPR6F-CS875	136			Crab Trap		125		6.7	41.5	25.2	34.7	6.8 LPR6	-CSMT-Comp39		
PR6 LI	PR6F	LPR6F-A	LPR6F-A10	LPR6F-CS886	110			Crab Trap	Right claw included	100	4 4	3.3	24.0	19.2	18.3	5.7 LPR6	-CSMT-Comp39		
.PR6 LI		LPR6G-C		LPR6G-CS183	88			Crab Trap		106		9.1	28.4	20.7	22.4	6.0 LPR6	-CSMH-Comp42		
.PR6 LI .PR6 LI .PR6 LI				LPR6G-CS213	178			Crab Trap Crab Trap		163 92		7.9 5.5	64.7 18.2	33.2 17.3	56.4 12.9	8.3 LPR6	CSMH-Comp42 CSMT-Comp43		
PR6 LI PR6 LI PR6 LI	PR6G	LPR6G-C															-c.sM1-comp43		
.PR6 LI .PR6 LI .PR6 LI .PR6 LI .PR6 LI	PR6G PR6G	LPR6G-C	LPR6G-C3	LPR6G-CS218	86														
.PR6 LI .PR6 LI .PR6 LI .PR6 LI .PR6 LI .PR6 LI	PR6G PR6G PR6G	LPR6G-C LPR6G-A	LPR6G-C3 LPR6G-A5	LPR6G-CS247	82	2 11	15 female	Crab Trap		92	8 3	5.5	18.2	17.3	12.9	5.4 LPR6	G-CSMT-Comp43		
.PR6 LI .PR6 LI .PR6 LI .PR6 LI .PR6 LI .PR6 LI .PR6 LI	PR6G PR6G	LPR6G-C	LPR6G-C3 LPR6G-A5 LPR6G-A7			1 12	15 female 27 male		Left claw included		8 3 7 5					5.4 LPR6 6.5 LPR6			

Table A2. Proposed composite samples for blue crab

each	Location ID	Trap ID	Trap	Specimen ID	Weight	Length	Gender	Collection Method	Comments	Reason for exclusion from composite?	Estimated WR weight	Estimated soft tissue WB weight	Estimated Muscle/HP weight	Estimated Carcass weight	Estimated Muscle- only weight	Estimated HP-only Weight Composite ID (tissue type 1)	Composite ID (tissue type 2)	Composite Notes
	LPR6G	LPR6G-C	LPR6G-C5	LPR6G-CS250	(g) 138	(mm) 139	male	Crab Trap	Comments	composite?	143.6		weight 53.1			7.6 LPR6-CSMH-Comp41	type 2)	Composite Notes
	LPR6G	LPR6G-A	LPR6G-A6	LPR6G-CS830	170	141	male	Crab Trap			148.4		56.0	30.2		7.7 LPR6-CSMH-Comp42		
	LPR6G	LPR6G-C	LPR6G-C4 LPR6G-A5	LPR6G-CS228 LPR6G-CS257	166			Crab Trap			155.8		60.3	31.7		8.0 LPR6-CSMH-Comp42		
	LPR6G LPR6G	LPR6G-A LPR6G-B	LPR6G-A5	LPR6G-CS257 LPR6G-CS833	226 226		male male	Crab Trap Crab Trap			198.6 219.1		83.6 93.7	39.7 43.1		9.5 LPR6-CSMT-Comp43 10.1 LPR6-CSMT-Comp43		
	LPR6H	LPR6H-B	LPR6H-B5	LPR6H-CS245	104		male	Crab Trap	Right spine damaged		94.7	37.4	19.7	17.7	14.3	5.4 LPR6-CSMH-Comp44		6H and 6M located near each other
	LPR6H	LPR6H-B	LPR6H-B7	LPR6H-CS854	144		male	Crab Trap			153.3	90.1	58.9	31.2		7.9 LPR6-CSMH-Comp44		6H and 6M located near each other
	LPR6H	LPR6H-A	LPR6H-A7	LPR6H-CS856	138		male	Crab Trap	Damaged right swimmerette		116.7	58.9	35.7	23.2		6.5 LPR6-CSMH-Comp44		6H and 6M located near each other
	LPR6H	LPR6H-B	LPR6H-B8	LPR6H-CS861	154		male	Crab Trap			148.4	86.2	56.0	30.2	48.3	7.7 LPR6-CSMH-Comp44		6H and 6M located near each other
	LPR6M	LPR6M-A	LPR6M-A3		130		male	Gillnet			134.3		47.3	27.2		7.2 LPR6-CSMH-Comp44		6H and 6M located near each other
	LPR6N LPR6N	LPR6N-A LPR6N-A	LPR6N-A3 LPR6N-A5	LPR6N-CS202 LPR6N-CS243	120 146	131	male male	Gillnet			125.3 108.4	66.7 51.1	41.5 29.9	25.2 21.2	34.7	6.8 LPRX-CSHT-Comp65 6.1 LPRX-CSHT-Comp65		insufficient mass for composite; not near other locations; HI insufficient mass for composite; not near other locations; HI
	PR6N	LPR6N-A		LPR6N-CS244	194		male	Gillnet			184.6		76.3	37.2		9.0 LPRX-CSHT-Comp65		insufficient mass for composite; not near other locations; HI
	LPR7F	LPR7F-C	LPR7F-C1	LPR7F-CS178	176			Crab Trap			160.8		63.3		55.1	8.2 LPR7-CSMH-Comp45		
	LPR7F	LPR7F-C	LPR7F-C1	LPR7F-CS180	136	132	male	Crab Trap			127.5	68.6	42.9	25.7	36.0	6.9 LPR7-CSMH-Comp46		
	LPR7F	LPR7F-C	LPR7F-C1	LPR7F-CS181	96	129		Crab Trap			120.9		38.6	24.2	31.9	6.6 LPR7-CSMH-Comp46		
	LPR7F	LPR7F-C	LPR7F-C2	LPR7F-CS186	154		male	Crab Trap			158.3		61.8	32.2		8.1 LPR7-CSMH-Comp46		
	LPR7F LPR7F	LPR7F-C LPR7F-A	LPR7F-C2 LPR7F-A3	LPR7F-CS187 LPR7F-CS210	150 140	142	male male	Crab Trap Crab Trap			150.9 129.7	88.1 70.6	57.4 44.4	30.7 26.2	49.6	7.8 LPR7-CSMT-Comp47 7.0 LPR7-CSMT-Comp47		
	LPR7F	LPR7F-A	LPR7F-A3	LPR7F-CS210	166		male male	Crab Trap			168.5					8.5 LPR7-CSMT-Comp47		
	LPR7F	LPR7F-C	LPR7F-C3	LPR7F-CS214	106	126	male	Crab Trap			114.6		34.2	22.7	27.9	6.4 LPR7-CSMT-Comp47		
- 1	LPR7F	LPR7F-A	LPR7F-A3	LPR7F-CS216	128	130	male	Crab Trap			123.1	64.7	40.0	24.7	33.3	6.7 LPR7-CSMH-Comp45		
	LPR7F	LPR7F-A	LPR7F-A4	LPR7F-CS230	152		male	Crab Trap			148.4		56.0	30.2		7.7 LPR7-CSMH-Comp45		
	LPR7F	LPR7F-B	LPR7F-B4	LPR7F-CS237	96		male	Crab Trap			102.4		25.5			5.8 LPR7-CSMH-Comp45		
	LPR7F LPR7G	LPR7F-A LPR7G-A	LPR7F-A4 LPR7G-A1	LPR7F-CS238 LPR7G-CS169	90 170		male male	Crab Trap Crab Trap			92.8 165.9		18.2 66.2	17.3 33.7		5.4 LPR7-CSMH-Comp46 8.4 LPR7-CSMH-Comp48		
	LPR7G LPR7G	LPR7G-A	LPR7G-A1	LPR7G-CS169 LPR7G-CS172	1/0		male male	Crab Trap			165.9		79.2	33.7		9.2 LPR7-CSMH-Comp48		
	LPR7G	LPR7G-B	LPR7G-B1	LPR7G-CS172 LPR7G-CS173	134		male	Crab Trap			132.0		45.8			7.1 LPR7-CSMH-Comp48		
	LPR7G	LPR7G-C	LPR7G-C1	LPR7G-CS174	234	164	male	Crab Trap			210.2	131.0	89.4	41.7	79.5	9.9 LPR7-CSMH-Comp49		
	LPR7G	LPR7G-C	LPR7G-C1	LPR7G-CS175	114		male	Crab Trap			134.3	74.5	47.3	27.2	40.1	7.2 LPR7-CSMH-Comp50		
	LPR7G	LPR7G-C	LPR7G-C2	LPR7G-CS188	76			Crab Trap			91.0		16.8	16.8		5.3 LPR7-CSMH-Comp50		
	PR7G	LPR7G-C LPR7G-B	LPR7G-C2 LPR7G-B2	LPR7G-CS189 LPR7G-CS193	228 110	175	male male	Crab Trap Crab Trap			244.0 116.7		105.4	47.1 23.2	94.5	10.9 LPR7-CSMH-Comp50 6.5 LPR7-CSMH-Comp49		
	LPR7G LPR7G	LPR7G-B	LPR7G-B2 LPR7G-B3	LPR7G-CS193 LPR7G-CS220	110		male male	Crab Trap			116.7		35.7 63.3	32.7		8.2 LPR7-CSMH-Comp49		
	PR7G	LPR7G-B	LPR7G-C3	LPR7G-CS223	176		male male	Crab Trap			176.4	107.6	72.0	35.7	63.2	8.8 LPR7-CSMH-Comp49		
	LPR7G	LPR7G-A	LPR7G-A3	LPR7G-CS224	148		male	Crab Trap			155.8		60.3			8.0 LPR7-CSMT-Comp51		
	LPR7G	LPR7G-A	LPR7G-A3	LPR7G-CS225	140		male	Crab Trap			125.3	66.7	41.5	25.2	34.7	6.8 LPR7-CSMT-Comp51		
	LPR7G	LPR7G-C	LPR7G-C3	LPR7G-CS227	106		male	Crab Trap			112.5		32.8	22.2		6.3 LPR7-CSMT-Comp51		
	LPR7G	LPR7G-C	LPR7G-C4		170		male	Crab Trap			155.8		60.3	31.7	52.3	8.0 LPR7-CSMT-Comp51		
	PR7G	LPR7G-C	LPR7G-C4	LPR7G-CS231	244 160		male	Crab Trap			213.1		90.8	42.2		10.0 LPR7-CSMT-Comp52 7.8 LPR7-CSMT-Comp52		
	PR7G	LPR7G-A		LPR7G-CS232 LPR7G-CS262	160		male male	Crab Trap Crab Trap			201.4		57.4 85.0	30.7 40.2		9.6 LPR7-CSMT-Comp52		
	PR7G	LPR7G-C		LPR7G-CS264	170		male	Crab Trap			158.3		61.8	32.2		8.1 LPR7-CSMT-Comp52		
	LPR7H	LPR7H-B	LPR7H-B2	LPR7H-CS194	140		male	Crab Trap	Missing left leg		138.9		50.2	28.2	42.8	7.4 LPR7-CSMH-Comp53		
- 1	LPR7H	LPR7H-B	LPR7H-B3	LPR7H-CS209	84	115	male	Crab Trap			92.8	35.5	18.2	17.3	12.9	5.4 LPR7-CSMH-Comp53		
	LPR7H	LPR7H-B		LPR7H-CS234	104		male	Crab Trap			110.4		31.3	21.7		6.2 LPR7-CSMH-Comp53		
	LPR7H	LPR7H-C		LPR7H-CS253	234		male	Crab Trap			222.2			43.6		10.2 LPR7-CSMH-Comp53		
	LPR7H LPR7M	LPR7H-B LPR7M-A		LPR7H-CS256 LPR7M-CS168	218 152		male male	Crab Trap Gillnet			184.6 171.1		76.3 69.1	37.2 34.7		9.0 LPR7-CSMH-Comp53 8.6 LPRX-CSHT-Comp65		insufficient mass for composite; not near other locations; H
	PR7O	LPR7O-C		LPR70-CS259	152		male	Trotline			153.3		58.9	31.2		7.9 LPRX-CSHT-Comp65		insufficient mass for composite; not near other locations; H
3 1	LPR8J	LPR8J-B	LPR8J-B2	LPR8J-CS770	148	135	male	Crab Trap			134.3	74.5	47.3	27.2	40.1	7.2 LPR8-CSMH-Comp54		8J and 8V located near each other
	LPR8J	LPR8J-B	LPR8J-B2	LPR8J-CS772	222		male	Crab Trap			219.1		93.7	43.1		10.1 LPR8-CSMH-Comp55		8J and 8V located near each other
	LPR8J	LPR8J-C	LPR8J-C3	LPR8J-CS776	134 126		male	Crab Trap			138.9		50.2 40.0	28.2		7.4 LPR8-CSMH-Comp55 6.7 LPR8-CSMH-Comp58		8J and 8V located near each other
	PR8K	LPR8K-B LPR8K-A	LPR8K-B1	LPR8K-CS757	202		male	Crab Trap Crab Trap			123.1		40.0 85.0	40.2		9.6 LPR8-CSMH-Comp58		
	PRSK	LPR8K-A	LPR8K-A2	LPR8K-CS766	156		male	Crab Trap			146.0		54.5	29.7		7.7 LPR8-CSMT-Comp60		
	LPR8K	LPR8K-B	LPR8K-B2	LPR8K-CS768	172		male	Crab Trap			158.3		61.8	32.2		8.1 LPR8-CSMT-Comp59		
- 1	LPR8K	LPR8K-B	LPR8K-B2	LPR8K-CS769	126	128	male	Crab Trap			118.8	60.8	37.1	23.7	30.6	6.5 LPR8-CSMH-Comp57		
	LPR8K	LPR8K-B	LPR8K-B3	LPR8K-CS783	148		male	Crab Trap			146.0		54.5	29.7		7.7 LPR8-CSMH-Comp58		
	LPR8K	LPR8K-B	LPR8K-B3	LPR8K-CS784	160		male	Crab Trap			146.0		54.5			7.7 LPR8-CSMH-Comp57		
	LPR8K LPR8K	LPR8K-B LPR8K-B	LPR8K-B3 LPR8K-B3	LPR8K-CS786 LPR8K-CS787	102 112		male male	Crab Trap Crab Trap			104.4		27.0 29.9	20.2		5.9 LPR8-CSMH-Comp57 6.1 LPR8-CSMH-Comp58		
	LPR8K	LPR8K-B	LPR8K-B3	LPR8K-CS788	138		male male	Crab Trap	1	1	150.9		29.9 57.4	30.7		7.8 LPR8-CSMT-Comp59		
	LPR8K	LPR8K-A	LPR8K-A3	LPR8K-CS789	128		male	Crab Trap			132.0		45.8	26.7		7.1 LPR8-CSMT-Comp60		
	LPR8K	LPR8K-B	LPR8K-B4	LPR8K-CS802	152		male	Crab Trap			158.3		61.8	32.2		8.1 LPR8-CSMT-Comp59		
	LPR8K	LPR8K-B	LPR8K-B4	LPR8K-CS803	136		male	Crab Trap			118.8		37.1	23.7		6.5 LPR8-CSMH-Comp58		
	LPR8K	LPR8K-C	LPR8K-C4	LPR8K-CS806	208		male	Crab Trap	1		240.8		103.9	46.6		10.8 LPR8-CSMH-Comp57 6.0 LPR8-CSMH-Comp56		
	LPR8R LPR8R	LPR8R-A LPR8R-A	LPR8R-A1 LPR8R-A2	LPR8R-CS756 LPR8R-CS762	96 185		male male	Gillnet			106.4 179.1		28.4 73.4	20.7 36.2		6.0 LPR8-CSMH-Comp56 8.8 LPR8-CSMH-Comp56		
	LPR8R	LPR8R-A	LPR8R-A2	LPR8R-C5762	198		male	Gillnet			179.1		73.4			8.8 LPR8-CSMH-Comp56		
	LPR8R	LPR8R-A	LPR8R-A4	LPR8R-CS808	114	125	male	Gillnet			112.5	55.0	32.8	22.2	26.5	6.3 LPR8-CSMH-Comp56		
	LPR8S	LPR8S-A	LPR8S-A3	LPR8S-CS790	206		male	Gillnet			195.7	121.3	82.1	39.2		9.4 LPR8-CSMH-Comp61		
	LPR8S	LPR8S-A	LPR8S-A3	LPR8S-CS792	94		male	Gillnet	Missing right swimmerette		94.7		19.7	17.7		5.4 LPR8-CSMT-Comp62		
	LPR8S	LPR8S-A	LPR8S-A3	LPR8S-CS794	178		male	Gillnet			187.3		77.8	37.7		9.1 LPR8-CSMH-Comp61		
	LPR8S LPR8S	LPR8S-A LPR8S-A	LPR8S-A3 LPR8S-A3	LPR8S-CS795 LPR8S-CS796	152 134		male male	Gillnet			150.9 134.3		57.4 47.3	30.7 27.2	49.6 40.1	7.8 LPR8-CSMH-Comp61 7.2 LPR8-CSMH-Comp61		
	LPR8S	LPR8S-A	LPR8S-A3	LPR8S-CS797	126		male	Gillnet	1	1	129.7		44.4			7.0 LPR8-CSMH-Comp61		
- 1	LPR8S	LPR8S-A	LPR8S-A3	LPR8S-CS798	138	142	male	Gillnet	Right claw included		150.9	88.1	57.4	30.7	49.6	7.8 LPR8-CSMT-Comp62		
	LPR8S	LPR8S-A	LPR8S-A4	LPR8S-CS816	184		male	Gillnet			171.1		69.1	34.7	60.5	8.6 LPR8-CSMT-Comp62		
	LPR8S	LPR8S-A	LPR8S-A4	LPR8S-CS817	150		male	Gillnet	Missing left leg		158.3		61.8	32.2	53.7	8.1 LPR8-CSMT-Comp62		
	LPR8V	LPR8V-A	LPR8V-A4	LPR8V-CS774	144		male	Boat Electrofishin	(134.3		47.3	27.2		7.2 LPR8-CSMH-Comp54		8J and 8V located near each other
	LPR8V LPR8V	LPR8V-A LPR8V-A	LPR8V-A5 LPR8V-A5	LPR8V-CS811 LPR8V-CS812	94 126		male male	Boat Electrofishin			94.7 106.4	37.4 49.1	19.7 28.4	17.7 20.7	14.3	5.4 LPR8-CSMH-Comp55 6.0 LPR8-CSMH-Comp54		8J and 8V located near each other 8J and 8V located near each other
	LPR8V LPR8V	LPR8V-A	LPR8V-A5	LPR8V-CS812 LPR8V-CS813	130		male	Boat Electrofishin			129.7	70.6	44.4	26.2		7.0 LPR8-CSMH-Comp54		8J and 8V located near each other
	LPR8V	LPR8V-A	LPR8V-A5	LPR8V-CS814	112		male	Boat Electrofishin			112.5		32.8			6.3 LPR8-CSMH-Comp55		8J and 8V located near each other
	LPR8Y	LPR8Y-A	LPR8Y-A1	LPR8Y-CS759	132		male	Backpack Electro	ni .		118.8		37.1	23.7		6.5 LPR8-CSHT-Comp66		insufficient mass for composite; HT-sample done across lo
	LPR1H	LPR1H-A	LPR1H-A1	LPR1H-CS346	224	150	male	Trotline	Missing right claw	Missing one claw						8.6		
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS314	118	139	female	Gillnet	Soft shell, recently molted	Soft shell crab								
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS317	220		male	Gillnet	Missing left claw, right claw included	Missing one claw						9.3		
	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A1 LPR1I-A1	LPR1I-CS322 LPR1I-CS328	246		male	Gillnet	Missing both claws	Missing both claws < 114 mm						9.9		
	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A1 LPR1I-A1	LPR1I-CS328 LPR1I-CS329	54 84	100	female female	Gillnet		< 114 mm < 114 mm								
	LPR1I	LPR1I-A	LPR1I-A1	LPR1I-CS329	82			Gillnet		< 114 mm								
		LPR1I-A	LPR1I-A2	LPR1I-CS415	114) female	Gillnet	Recently molted, soft shell; right claw mis	si Missing one class (also soft shall or	. 6.3							

Table A2. Proposed composite samples for blue crab

Table /	12. Propose	ed composit	te samples f	or blue crab															
												Estimated	Estimated	Estimated	Estimate	Estimated			
	Location		Trap		Weight	Lengt	h	Collection		Reason for exclusion from	Estimated			Carcass	Muscle-	HP-only	Composite ID (tissue	Composite ID (tissue	
Reach	ID	Trap ID	Attempt ID	Specimen ID		(mm		Method	Comments	composite?	WB weight	WB weight	weight	weight	only weigl	nt weight	type 1)	type 2)	Composite Notes
LPR1	LPR1I	LPR1I-A	LPR1I-A2 LPR1I-A2	LPR1I-CS416 LPR1I-CS417	156			Gillnet	Missing left leg. left claw	< 114 mm						7.0			
LPR1	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A2 LPR1I-A3	LPR1I-CS566	140		39 male 40 male	Gillnet	Missing left claw and swimmerette	Missing one claw Missing one claw						7.6			
LPR1	LPR1I	LPR1I-A	LPR1I-A3	LPR1I-CS567	140	0 1	35 female	Gillnet	Soft shell; missing left leg and swimmerette										
LPR1 LPR1	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A3 LPR1I-A3	LPR1I-CS568 LPR1I-CS571	174	4 1	46 male 24 female	Gillnet	Missing right claw and leg Soft-shell; missing both claws and legs	Missing one claw	- I- V					8.2			
LPR1	LPR1I	LPR1I-A	LPR1I-A3	LPR1I-CS5/1 LPR1I-CS649	104		90 female	Gillnet	Sort-snell; missing both claws and legs	Missing both claws (also soft shell cra < 114 mm	30)								
LPR1	LPR1I	LPR1I-A	LPR1I-A4	LPR1I-CS652	180	0 1	59 female	Gillnet	Soft shell; damaged right spine, right claw;		ell crab)								
LPR1	LPR1I	LPR1I-A	LPR1I-A5	LPR1I-CS704	70	0 1	14 female	Gillnet	Missing right leg, left swimmerette, right cla	Missing one claw						5.3			
LPR1	LPR1I LPR1I	LPR1I-A LPR1I-A	LPR1I-A5 LPR1I-A5	LPR1I-CS705 LPR1I-CS709	166		40 male 72 male	Gillnet	Missing right claw	Missing one claw						7.7			
LPR1	LPR1I	LPR1I-A	LPR1I-A5 LPR1I-A5	LPR1I-CS710	270		13 female	Gillnet	Missing right claws and 2 right legs	Missing one claw < 114 mm						10.0			
LPR1	LPR1I	LPR1I-A	LPR1I-A5	LPR1I-CS711	54	4 !	92 female	Gillnet		< 114 mm									
LPR1	LPR1J	LPR1J-A	LPR1J-A1	LPR1J-CS337	154	4 1	35 male	Gillnet	Missing left claw	Missing one claw						7.2			
LPR1 LPR1	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A1 LPR1J-A2	LPR1J-CS345 LPR1J-CS439	128		42 female 27 female	Gillnet	Soft shell Recently molted, soft shell	Soft shell crab Soft shell crab									
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS442	206	6 1	66 male	Gillnet	Missing right claw, right leg	Missing one claw						10.0			
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS447	84	4 1	12 female	Gillnet	Missing left claw	< 114 mm (also missing one claw)									
LPR1	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A2 LPR1J-A2	LPR1J-CS452 LPR1J-CS453	70		03 female 11 female	Gillnet		< 114 mm (also incomplete claw)									
IPR1	I PR1I	I PR11-A	IPR1I-A2	LPR1J-CS453	79	6 1	06 female	Gillnet	Missing left claw and 2 right legs	< 114 mm (also missing one claw) < 114 mm									
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS458	50	0 !	94 male	Gillnet	Both claws missing	< 114 mm (also missing both claws)									
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS459	312		76 male	Gillnet	Missing portion of left claw	Damage to crab noted									
LPR1	LPR1J	LPR1J-A	LPR1J-A2	LPR1J-CS466	117		07 female 24 female	Gillnet		< 114 mm Missing one claw (also soft shell crab)								
LPR1	LPR1J	LPRIJ-A LPRIJ-A	LPRIJ-A3	LPR1J-CS581	198		46 male	Gillnet	Missing right claw	Missing one claw						8.2			
LPR1	LPR1J	LPR1J-A	LPR1J-A3	LPR1J-CS584	104		48 female	Gillnet	Damaged abdominal apron; missing left leg	Missing one claw (also damage noted	i)								
LPR1	LPR1J	LPR1J-A	LPR1J-A3 LPR1J-A3	LPR1J-CS585 LPR1J-CS587	74		12 female	Gillnet	Missing left swimmerette	< 114 mm < 114 mm									
LPR1	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A3 LPR1J-A3	LPR1J-CS587 LPR1J-CS593	70		83 male 06 female	Gillnet		< 114 mm < 114 mm									
LPR1	LPR1J	LPR1J-A	LPR1J-A4	LPR1J-CS665	242	2 1	46 male	Gillnet	Right claw damaged	Damage to crab noted									
LPR1	LPR1J	LPR1J-A	LPR1J-A4	LPR1J-CS668	140		59 female	Gillnet	Missing right claw, swimmerette	Missing one claw						9.4			
LPR1 LPR1	LPR1J LPR1J	LPR1J-A LPR1J-A	LPR1J-A4 LPR1J-A4	LPR1J-CS672 LPR1J-CS674	138		27 male 53 male	Gillnet	Damaged left claw Left claw damaged	Damage to crab noted Damage to crab noted									
LPR1	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS690	258	8 1	65 male	Gillnet	Missing right claw and leg	Missing one claw						10.0			
LPR1	LPR1J	LPR1J-A	LPR1J-A5	LPR1J-CS694	174	4 1	50 male	Gillnet	Missing right claw	Missing one claw						8.6			
LPR1 LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A1 LPR1K-A1	LPR1K-CS349 LPR1K-CS350	148	8 1	52 female 32 male	Gillnet	Missing left claw, right swimmerette Missing right claw, right leg	Missing one claw Missing one claw						8.8 6.9			
LPR1	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS350	88		13 female	Gillnet	Missing right claw, right leg	< 114 mm						0.3			
LPR1	LPR1K	LPR1K-A	LPR1K-A1	LPR1K-CS356	138		47 female	Gillnet	Missing left claw; recently molted	Missing one claw (also soft shell crab)								
LPR1 LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A1 LPR1K-A2	LPR1K-CS357 LPR1K-CS468	58 88	8 !	98 female 27 female	Gillnet	Missing left leg	< 114 mm	L-1								
LPR1	LPR1K	LPR1K-A	LPR1K-A2 LPR1K-A2	LPR1K-CS470	70		07 female	Gillnet	Soft shell; both claws and left swimmerette	< 114 mm	10)								
LPR1	LPR1K	LPR1K-A	LPR1K-A2	LPR1K-CS471	196	6 1	51 male	Gillnet	Missing right claw, right leg	Missing one claw						8.7			
LPR1	LPR1K	LPR1K-A	LPR1K-A2	LPR1K-CS473	236	6 1	55 male	Gillnet	Missing left claw	Missing one claw						9.0			
LPR1	LPR1K LPR1K	LPR1K-A		LPR1K-CS474 LPR1K-CS475	256	6 1	59 male 25 female	Gillnet	Cracked shell; 1 eye missing Soft shell; left spine damaged	Damage to crab noted Soft shell crab									
LPR1	LPR1K	LPR1K-A		LPR1K-CS477	190		42 male	Gillnet	Missing left claws and left leg	Missing one claw						7.8			
LPR1	LPR1K	LPR1K-A		LPR1K-CS479	170		46 male	Gillnet	Missing left claw	Missing one claw						8.2			
LPR1	LPR1K LPR1K	LPR1K-A		LPR1K-CS482 LPR1K-CS483	214		49 male 34 male	Gillnet	Missing left claw; left spine damaged Missing left claw	Missing one claw Missing one claw						8.5			
LPR1	LPR1K	LPR1K-A	LPR1K-A3	LPR1K-CS504	68	8 1	02 female	Gillnet		< 114 mm									
LPR1	LPR1K	LPR1K-A		LPR1K-CS510	214		56 male	Gillnet	Missing right claw	Missing one claw						9.1			
LPR1 LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A		LPR1K-CS512 LPR1K-CS514	170		43 male 10 female	Gillnet	Missing left claw Missing right leg	Missing one claw < 114 mm						7.9			
LPR1	LPR1K	LPR1K-A		LPR1K-CS519	94		12 male	Gillnet		< 114 mm									
LPR1	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS610	282		72 male	Gillnet	Missing right claw	Missing one claw						10.6			
LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A4 LPR1K-A4	LPR1K-CS613 LPR1K-CS614	256		63 male 37 female	Gillnet	Missing left claw, left leg Soft shell; missing right claw and swimmere	Missing one claw	1					9.8			
LPR1	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS615	74		08 female	Gillnet		< 114 mm	,								
LPR1	LPR1K	LPR1K-A	LPR1K-A4	LPR1K-CS618	104	4 1	06 male	Gillnet		< 114 mm									
LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A4 LPR1K-A4	LPR1K-CS621 LPR1K-CS622	114		29 male 47 male	Gillnet	Missing left leg, portion of left claw	Damage to crab noted < 114 mm									
LPR1	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS677	150	0 1	26 male	Gillnet	Missing left claw	Missing one claw						6.4			
LPR1	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS678	344	4 1	99 male	Gillnet	Missing left claw	Missing one claw						13.1			
LPR1 LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A5 LPR1K-A5	LPR1K-CS682 LPR1K-CS683	106		22 female 20 male	Gillnet	Missing right claw and 2 right legs; 2 left leg Missing left claw and 3 left legs							6.0 5.8			
LPR1	LPR1K LPR1K	LPR1K-A LPR1K-A	LPR1K-A5 LPR1K-A5	LPR1K-CS684	224		20 maie 59 maie	Gillnet	Missing left claw and 3 left legs Missing left claw; left swimmerette damage	Missing one claw Missing one claw						9.4			
LPR1	LPR1K	LPR1K-A	LPR1K-A5	LPR1K-CS687	166	6 1	35 male	Gillnet	Missing left claw	Missing one claw						7.2			
LPR1 LPR1	LPR1K LPR1L	LPR1K-A LPR1L-A	LPR1K-A5 LPR1L-A1	LPR1K-CS688 LPR1L-CS274	122	2 1	43 female 71 female	Gillnet Crab Trap	Missing right claw; left claw included	Missing one claw < 114 mm						7.9			
LPR1	LPR1L LPR1L	LPR1L-A LPR1L-B	LPR1L-A1 LPR1L-B1	LPR1L-CS274 LPR1L-CS275	30 56	6	71 female 92 male	Crab Trap		< 114 mm < 114 mm									
LPR1	LPR1L	LPR1L-B	LPR1L-B2	LPR1L-CS498	100	0 1	12 male	Crab Trap	Damaged left claw, missing right leg	< 114 mm (also damage to crab)									
LPR1	LPR1L LPR1L	LPR1L-A LPR1L-B	LPR1L-A3 LPR1L-B3	LPR1L-CS562 LPR1L-CS563	60		97 female 66 male	Crab Trap		< 114 mm < 114 mm									
LPR1	LPR1L LPR1L	LPR1L-B LPR1L-B		LPR1L-CS563 LPR1L-CS642	70	0	66 male 99 male	Crab Trap Crab Trap	Recently molted	< 114 mm Soft shell crab									
LPR1	LPR1L	LPR1L-A	LPR1L-A4	LPR1L-CS645	45	5	89 female	Crab Trap		< 114 mm									
LPR1	LPR1L	LPR1L-B		LPR1L-CS646	15	5	75 male	Crab Trap		< 114 mm									
LPR1	LPR1L LPR1I	LPR1L-A	LPR1L-A4	LPR1L-CS648 LPR1L-CS728	52	6	91 female 83 female	Crab Trap Crab Trap		< 114 mm < 114 mm									
LPR1	LPR1L	LPR1L-A	LPR1L-A5	LPR1L-CS736	186	6 1	60 male	Crab Trap	Missing both claws	Missing both claws						9.5			
LPR1	LPR1L	LPR1L-B		LPR1L-CS753	14		54 male	Crab Trap		< 114 mm									
LPR1	LPR1M LPR1M	LPR1M-A LPR1M-B		LPR1M-CS543 LPR1M-CS545	70		13 female 17 male	Crab Trap Crab Trap	Recently molted	< 114 mm Soft shell crab									
LPR1	LPR1M	LPR1M-C		LPR1M-CS574	58	8 !	92 female	Crab Trap	necessary moned	< 114 mm									
LPR1	LPR1M	LPR1M-B	LPR1M-B3	LPR1M-CS576	20	0 :		Crab Trap		< 114 mm									
LPR1 LPR1	LPR1M LPR1M	LPR1M-A LPR1M-B		LPR1M-CS644 LPR1M-CS654	63	4	98 female 78 female	Crab Trap Crab Trap		< 114 mm < 114 mm									
LPR1	LPR1M	LPR1M-B	LPR1M-B4	LPR1M-CS656	26	6	72 male	Crab Trap		< 114 mm									
LPR1	LPR1M	LPR1M-A	LPR1M-A5	LPR1M-CS733	24	4 (69 female	Crab Trap		< 114 mm									
LPR1 LPR1	LPR1M LPR1M	LPR1M-C LPR1M-C		LPR1M-CS735 LPR1M-CS740	246	6 1	89 female 58 male	Crab Trap Crab Trap	Missing right claw	< 114 mm Missing one claw						9.3			
LPR1	LPR1N	LPR1N-A	LPR1N-A1	LPR1N-CS362	58	8 !	93 female	Crab Trap		< 114 mm						3.3			
LPR1	LPR1N	LPR1N-C	LPR1N-C2	LPR1N-CS437	76	6 1	10 female	Crab Trap	Missing left leg; regrowing left claw	< 114 mm (also incomplete claw)									

Table A2. Proposed composite samples for blue crab

Part	Tab	e A2. Prop	osed compos	ite samples	for blue crab															
													Estimated	Estimated	Estimated	Estimated	Estimated			
1. 1. 1. 1. 1. 1. 1. 1.			-				Length	n						,						
10 10 10 10 10 10 10 10							(mm)	Gender		Comments		WB weight	WB weight	weight	weight	only weight		type 1)	type 2)	Composite Notes
10	LPR1	LPR1N															1.1			
1																				
1						150				Missing left claw, 2 right legs							7.3			
10 170	LPR1					46														
1	LPR1				LPR1N-CS655	120														
10 10 10 10 10 10 10 10						8					< 114 mm (also missing one claw)									
10	LPR1																			
10 10 10 10 10 10 10 10	LPR2																			
10 10 10 10 10 10 10 10	LPR2				LPR2I-CS746						Missing both claws (also soft shell cra	b)								
1. 1. 1. 1. 1. 1. 1. 1.	LPR2									Missing both claws, 1 left leg										
10	LPR2									Missing left claw							8.9	LPR2-CSH1-Comp63		H1-sample done across locations using crabs missing claws
Margin M	LPR2																12.0			outside of size range
10	LPR2									Recently molted; missing left claw	Missing one claw (also soft shell crab)									
March Marc	LPR2									Missing right claw	Missing one claw						6.5	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
10	LPR2																8.2	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
1.	LPR2	LPR2J	LPR2J-A	LPR2J-A3	LPR2J-CS534	54	1 9	92 male	Gillnet		< 114 mm									
15 15 15 15 15 15 15 15																				
10 10 10 10 10 10 10 10							2 10	6 female		Regrowing right claw	< 114 mm (also incomplete claw)									
19																				
1.00 100.5							2 16	2 male		Missing right claw, 2 left legs	Missing one claw									HT-sample done across locations using crabs missing claws
1										Missing left claw	Missing one claw						7.9	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
19. 19.																				
1922 1925																	8.4	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
10.5 10.5	LPR2	LPR2K	LPR2K-A	LPR2K-A1	LPR2K-CS288	152	2 12	24 male	Gillnet	Missing left claw and left spine	Missing one claw									
Proc. Proc																				
1972 1972																	0.0	LDD2 CCUT CC2		HT cample done across locations who well-a related to
1972 1973 1974																				
1.00 1.00	LPR2																			
Page	LPR2									Missing right claw, right leg										HT-sample done across locations using crabs missing claws
11 11 12 13 13 14 15 15 15 15 15 15 15	LPR2									Missing both claws	Missing both claws						8.4	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
Proc. Proc	LPR2							77 male									11.1	I PR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
Proc. Proc	LPR2				LPR2K-CS396					Missing left claw, right claw included	Missing one claw									
PRINCE P	LPR2	LPR2K			LPR2K-CS399					Missing portion of left claw and tip of right	Damage to crab noted									
PRZ LPR2				LPR2K-CS402		3 13	5 male		Missing portion of abdominal apron, left cla	Missing one claw (also damage noted)									
Part										Missing left claw							0 2	I DD2.CSHT.Comn62		HT-sample done across locations using crahe missing clause
Fig. Column Col	LPR2									Missing right claw. right leg							6.7	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws
Part	LPR2										< 114 mm									
1982 1992 1993 1994	LPR2									Missing left claw, leg, and swimmerette	Missing one claw						6.5	LPR2-CSHT-Comp63		HT-sample done across locations using crabs missing claws
Fig.										Missing left claw and swimmerette	< 114 mm (also missing one claw)									
PRZ LPR2										< 114 mm										
Ministry																				
1982 1982										Missing all right legs and right claw	Missing one claw									HT-sample done across locations using crabs missing claws
URZN										Missing right claw							9.8	LPR2-CSH1-Comp63		H1-sample done across locations using crabs missing claws
1972 1972																				
										Missing right and left leg										
1972 1972																				
PRZ PRZN PRZNC																				
UPR2	LPR2	LPR2N	LPR2N-C	LPR2N-C1	LPR2N-CS361	48	3 9	3 female												
UR2																				
																	7.5			H1-sample done across locations using crabs missing claws
	LPR2																7.4			HT-sample done across locations using crabs missing claws
PR3 LPR2	LPR2N	LPR2N-C	LPR2N-C5	LPR2N-CS737	130	12	6 male	Crab Trap	Regrowing left claw	Incomplete claw						6.4				
PR3 PR3F PR3F-8 PR3F-8 PR3F-6 PR3F-6																				
LPR3F LPR3	LPR:									ivilssing right claw										
LPR3	LPR																6.3	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
PR8 LPR8 L	LPR3	LPR3F	LPR3F-B	LPR3F-B3	LPR3F-CS056	48	3 9	7 male	Crab Trap	Recently molted soft-shell; missing third lef	Soft shell crab						2,0			
LPR3	LPR:									Recently molted soft-shell										
PR83 PR83G PR83GA PR83GA PR83G-S031 2 60 male Crab Trap 114 mm	LPR									Parasite attached: regrowth of left class										
PRS LPRSG LPRSG-M	LPR																			
PR83 PR83G PR83G	LPR3	LPR3G	LPR3G-A	LPR3G-A2	LPR3G-CS031	12	2 6	0 male	Crab Trap		< 114 mm									
LPR3	LPR3					58	3 10	5 female												
PR3 PR3H PR3H-A2 PR3H-A2 PR3H-A2 PR3H-A5059 60 100 male rab Trap < 114 mm																				
PR3 PR3 PR3 PR3 PR3 PR3 PR3 PR3 PR3 PR3	LPR:																			
LPR3 LPR3H LPR3H-A LPR3H-AS LPR3H-CS059 108 121 male Crab Trap Missing right claw Missing one claw LPR3H LPR3H-AS LPR3H-CS06 10 52 male Crab Trap Detached right claw C114 mm LPR3H-AS LPR3H-CS06 10 S2 male Crab Trap C114 mm LPR3H-AS LPR3H-CS06 78 106 female Cilinet C114 mm LPR3H-AS LPR3M-AS LPR3M-CS016 58 101 female Cilinet C114 mm LPR3H-CS016 C114 mm LPR3M-AS LPR3M-CS016 58 101 female Cilinet C114 mm LPR3H-CS016 C114 mm	LPR3	LPR3H	LPR3H-A	LPR3H-A3	LPR3H-CS058	20) 6	2 male	Crab Trap		< 114 mm									
LPR3	LPR3	LPR3H	LPR3H-A	LPR3H-A3	LPR3H-CS059	108	3 12	1 male	Crab Trap	Missing right claw	Missing one claw						5.9	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
PR3	LPR3									Detached right claw	< 114 mm (also missing claw)									
LPR3						34														
LPR3M	LPR3	LPR3M	LPR3M-A	LPR3M-A1	LPR3M-CS006		3 10	6 female	Gillnet		< 114 mm									
LPR3 LPR3M-LPR3M-A LPR3M-A2 LPR3M-CS016 58 101 male Gillnet < 114 mm						56	5 10													
LPR3 LPR3M-LA LPR3M-SA LPR3M-SA <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>																				
LPR3 LPR3M-LA LPR3M-A LPR3M-SA																				
LPR3 LPR3M LPR3M-A LPR3M-A5HT-Comp64 IPR3-GSHT-Comp64 IHT-sample done across locations using crabs missing claws																				
	LPR	LPR3M	LPR3M-A	LPR3M-A5	LPR3M-CS114	148	3 14	14 male	Gillnet	Missing right claw	Missing one claw						8.0	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws

Table A2. Proposed composite samples for blue crab

Tab	le A2.	Propose	d composit	e samples for	blue crab															
													Estimated	Estimated	Estimated	Estimat	ed Estimated			
		Location		Trap		Weight	Length	n .	Collection		Reason for exclusion from	Estimated		Muscle/HP		Muscle		Composite ID (tissue	Composite ID (tissue	
Re LPR		ID PR3M	Trap ID LPR3M-A	LPR3M-A5 LF	Specimen ID PR3M-CS116	(g) 78	(mm)	Gender 19 male	Method	Comments Missing both claws and 1 right leg	composite? Missing both claws	WB weight	WB weight	weight	weight	only wei		type 1) LPR3-CSHT-Comp64	type 2)	Composite Notes HT-sample done across locations using crabs missing claws
LPR	3 L	PR3M	LPR3M-A	LPR3M-A5 LF	PR3M-CS117	70	11	2 female	Gillnet		< 114 mm						5.7	EFR3-CSITI-COMpos		Tit-sample done across locations using craus missing claws
LPR		PR3N	LPR3N-A		PR3N-CS004	62		9 female	Gillnet		< 114 mm									
LPR		PR3N PR3N	LPR3N-A LPR3N-A		PR3N-CS005 PR3N-CS046	16 112		64 male 27 male	Gillnet	Right claw detached Missing left claw	< 114 mm (also missing claw) Missing one claw						6.5	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR	3 L	PR3N	LPR3N-A	LPR3N-A3 LF	PR3N-CS047	58	10	00 male	Gillnet	Missing left claw and 2nd left leg	< 114 mm (also missing one claw)									The sample done deloss locations asing crass missing class
LPR	3 L	PR3N	LPR3N-A		PR3N-CS049	94		7 male	Gillnet		Missing one claw						6.5	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR3N PR3N	LPR3N-A LPR3N-A		PR3N-CS050 PR3N-CS052	72 120		10 male 15 male	Gillnet	Missing left claw and right legs Missing left claw	< 114 mm (also missing one claw) Missing one claw						7.2	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR3N	LPR3N-A		PR3N-CS052	34	7	9 male	Gillnet	ivissing left claw	< 114 mm									111-sample done across locations using crabs missing craws
LPR		PR3N	LPR3N-A		PR3N-CS076	90		25 male	Gillnet	Missing right swimmerette, left claw	Missing one claw						6.3	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR3N PR3N	LPR3N-A LPR3N-A		PR3N-CS080 PR3N-CS109	156 68		11 male 15 female	Gillnet	Missing left claw Missing both claws; partially crushed swimn	Missing one claw Missing both claws						6.8	LPR3-CSHT-Comp64 LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws
LPR	3 L	PR3N	LPR3N-A	LPR3N-A5 LI	PR3N-CS111	88	12	3 female	Gillnet	Missing legs and left claw	Missing one claw							LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR3N	LPR3N-A	LPR3N-A5 LF		38		85 male	Gillnet	Missing right leg and both claws	< 114 mm (also missing both claws)									
LPR		PR3N PR3O	LPR3N-A LPR3O-A	LPR3N-A5 LF	PR3N-CS115 PR3O-CS001	118 222	13	7 male 4 male	Gillnet	Missing left claw Missing right claw	Missing one claw Missing one claw						7.4	LPR3-CSHT-Comp64 LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws
LPR		PR3O	LPR3O-A		PR3O-CS035	178		1 male	Gillnet	Missing left claw	Missing one claw						9.6	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR3O	LPR3O-A		PR3O-CS037	64	11	2 female	Gillnet	Damaged spine, missing 2 legs	< 114 mm									
LPR		PR3O PR3O	LPR3O-A		PR3O-CS038 PR3O-CS064	54 58		00 female	Gillnet		< 114 mm									
LPR		PR3O	LPR3O-A		PR3O-CS066	58 82	11	2 male	Gillnet	Both claws, front right leg and right carapac										
LPR		PR3O	LPR3O-A	LPR3O-A3 LF		242		4 male	Gillnet	Missing left claw	Missing one claw							LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR3O PR3O	LPR3O-A	LPR3O-A3 LI		152 90		13 male	Gillnet	Missing right claw, damaged right leg Part of left spine broken	Missing one claw						7.9	LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR	3 L	PR3O	LPR3O-A	LPR3O-A4 LF	PR3O-CS084	172	14	10 male	Gillnet	Missing right claw	Missing one claw							LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR30	LPR3O-A	LPR3O-A4 LF		104		14 female	Gillnet	Missing left claw	Missing one claw							LPR3-CSHT-Comp64 LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		.PR3O .PR3O	LPR3O-A LPR3O-A	LPR3O-A5 LF	PR3O-CS095 PR3O-CS098	272 180		60 male 67 male	Gillnet	Missing right claw Missing left claw and swimmerette, 2 legs	Missing one claw Missing one claw							LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws
LPR	3 L	PR3O	LPR3O-A	LPR3O-A5 LF	PR30-CS101	126	12	7 male	Gillnet	Missing right claw, left spine damaged	Missing one claw							LPR3-CSHT-Comp64		HT-sample done across locations using crabs missing claws
LPR		PR30	LPR3O-A		PR3O-CS103	12 74		2 female	Gillnet	Missing left claw and 2 left legs; very soft sl		b)								
LPR		PR30 PR30	LPR3O-A LPR3O-A	LPR3O-A5 LF	PR3O-CS104 PR3O-CS105	74 132		10 female	Gillnet		< 114 mm Damage to crab noted									
LPR	1 L	PR4F	LPR4F-B	LPR4F-B2 LF	PR4F-CS108	34	7	6 male	Crab Trap		< 114 mm									
LPR		PR4F	LPR4F-C		PR4F-CS135	68		3 female	Crab Trap		< 114 mm									
LPR		PR4F PR4F	LPR4F-C LPR4F-C		PR4F-CS136 PR4F-CS139	86 70		12 female 17 female	Crab Trap Crab Trap	Missing both claws and right front leg	< 114 mm Missing both claws						5.5			
LPR	1 L	PR4F	LPR4F-B	LPR4F-B4 LF	PR4F-CS144	44	8	1 male	Crab Trap	inissing both claws and right front leg	< 114 mm						5.5			
LPR		PR4F	LPR4F-C	LPR4F-C5 LF	PR4F-CS155	72	9	9 male	Crab Trap		< 114 mm									
LPR		PR4F PR4G	LPR4F-C LPR4G-C		PR4F-CS159 PR4G-CS071	36 64		78 male 97 male	Crab Trap Crab Trap		< 114 mm < 114 mm									
LPR		PR4G	LPR4G-C		PR4G-CS134	58	10	00 male	Crab Trap	Right claw detached (included)	< 114 mm									
LPR		PR4G	LPR4G-A		PR4G-CS137	74		6 male	Crab Trap		< 114 mm									
LPR		PR4G PR4G	LPR4G-B LPR4G-A		PR4G-CS138 PR4G-CS154	28 72		73 male 03 male	Crab Trap Crab Trap		< 114 mm < 114 mm									
LPR	1 L	PR4G	LPR4G-B	LPR4G-B5 LF	PR4G-CS156	54	9	5 female	Crab Trap		< 114 mm									
LPR		PR4G	LPR4G-A		PR4G-CS873	90		13 male	Crab Trap		< 114 mm									
LPR		PR4G PR4H	LPR4G-B LPR4H-B	LPR4G-B10 LF	PR4G-CS892 PR4H-CS072	41 80	10	33 female	Crab Trap Crab Trap		< 114 mm < 114 mm									
LPR	1 L	PR4H	LPR4H-C	LPR4H-C1 LI	PR4H-CS074	84	12	8 female	Crab Trap	Missing left claw	Missing one claw						6.5			
LPR		PR4H	LPR4H-A		PR4H-CS125	78		0 female	Crab Trap	One missing right claw, one detached left of	Missing one claw						5.8			
LPR		PR4H PR4H	LPR4H-B LPR4H-A		PR4H-CS143 PR4H-CS150	56 26		00 male	Crab Trap Crab Trap		< 114 mm									
LPR		PR4H	LPR4H-C	LPR4H-C4 LF	PR4H-CS151	86		1 male	Crab Trap		< 114 mm									
LPR		PR4H PR4H	LPR4H-A		PR4H-CS837 PR4H-CS838	68 76		06 male	Crab Trap Crab Trap		< 114 mm									
LPR		PR4H	LPR4H-B		PR4H-CS845	118		9 male	Crab Trap	Right claw regrowing	Incomplete claw						6.6			
LPR		PR4L	LPR4L-A		PR4L-CS149	70		04 male	Gillnet		< 114 mm									
LPR		PR4L PR4L	LPR4L-A LPR4L-A		PR4L-CS162 PR4L-CS163	160 84		9 male 5 male	Gillnet	Missing right claw	Missing one claw < 114 mm						7.6			
LPR		PR4L PR4L	LPR4L-A LPR4L-A		PR4L-CS163 PR4L-CS824	186		16 male	Gillnet	Missing right claw	< 114 mm Missing one claw						8.2			
LPR	1 L	PR4O	LPR4O-A	LPR4O-A1 LF	PR4O-CS128	56	9	6 male	Gillnet		< 114 mm						0.2			
LPR		PR40 PR40	LPR4O-A LPR4O-A		PR4O-CS129 PR4O-CS140	84 94		06 male 21 male	Gillnet	Right spine broken Detached left claw	< 114 mm Missing one claw						5.9			
LPR		PR40 .PR40	LPR4O-A LPR4O-A		PR40-CS140 PR40-CS842	100		1 male 26 male	Gillnet	Missing left claw; damaged right swimmere							6.4			
LPR	1 L	PR4P	LPR4P-A	LPR4P-A2 LI	PR4P-CS142	68	11	0 male	Gillnet		< 114 mm									
LPR		PR5E PR5G	LPR5E-A	LPR5E-A1 LI		74		08 male	Gillnet		< 114 mm									
LPR	5 L	PR5G	LPR5G-A	LPR5G-A3 LF	PR5G-CS145	76		9 male	Gillnet	Missing left claw, right swimmerette	< 114 mm (also missing one claw)									
LPR		PR5G	LPR5G-A		PR5G-CS146	66		5 male	Gillnet		< 114 mm									
LPR		PR5G PR5I	LPR5G-A LPR5I-A		PR5G-CS147 PR5I-CS822	68 160		3 male 9 male	Gillnet	Missing right claw	< 114 mm Missing one claw						8.5			
LPR	5 L	PR5M	LPR5M-C	LPR5M-C4 LF	PR5M-CS161	102	12	5 female	Crab Trap	Missing left claw	Missing one claw						6.3			
LPR	5 L	PR5M	LPR5M-B	LPR5M-B6 LF	PR5M-CS868	34		84 female	Crab Trap		< 114 mm									
LPR	5 L	PR5M PR5M	LPR5M-B LPR5M-B	LPR5M-B7 LF	PR5M-CS882 PR5M-CS884	72 90		12 male 15 male	Crab Trap Crab Trap	Missing right claw Regrowing left claw	< 114 mm (also missing one claw) Incomplete claw						5.4			
LPR	5 L	PR5M	LPR5M-A	LPR5M-A10 LF	PR5M-CS887	67	11	2 female	Crab Trap		< 114 mm									
LPR	5 L	PR5M	LPR5M-A	LPR5M-A10 LF		166		1 male	Crab Trap	Missing left claw	Missing one claw						8.7			
LPR	5 L	PR5O PR5O	LPR5O-C LPR5O-C	LPR5O-C5 LF	PR50-CS164 PR50-CS165	50 40	8	7 male 1 male	Crab Trap Crab Trap	Missing 2 right legs	< 114 mm < 114 mm									
LPR		PR50	LPR5O-B	LPR5O-B5 LF	PR50-CS167	64	10	2 male	Crab Trap	Missing 2 right legs Missing left claw, left swimmerette, left leg										
LPR	5 L	PR5O	LPR5O-A	LPR5O-A6 LF	PR5O-CS827	76	10	5 male	Crab Trap		< 114 mm									
LPR		PR5O PR5O	LPR5O-A LPR5O-A	LPR5O-A7 LF	PR5O-CS846 PR5O-CS847	36 88		5 female 12 male	Crab Trap Crab Trap		< 114 mm < 114 mm									
LPR	, L	PR50	LPR5O-B	LPR5O-B10 LF	PR50-CS885	96		13 male	Crab Trap		< 114 mm									
LPR		PR6F	LPR6F-A		PR6F-CS182	94		12 male	Crab Trap		< 114 mm									
LPR		PR6F PR6F	LPR6F-A LPR6F-C		PR6F-CS196 PR6F-CS207	78 84		04 male 06 female	Crab Trap Crab Trap	Missing swimmerette	< 114 mm < 114 mm									
LPR		PR6F	LPR6F-C		PR6F-CS207 PR6F-CS219	96		12 male	Crab Trap	Right claw regrowing	< 114 mm (also incomplete claw)									
LPR	5 L	PR6F	LPR6F-A	LPR6F-A5 LF	PR6F-CS255	186	15	0 male	Crab Trap	Damaged right claw	Damage to crab noted									
LPR		PR6F PR6F	LPR6F-B	LPR6F-B6 LF	PR6F-CS828 PR6F-CS850	136 134		10 male	Crab Trap Crab Trap	Missing left claw	Missing one claw Missing one claw						7.7	LPRX-CSHT-Comp65 LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing claws HT-sample done across reaches and using crabs missing claws
LPR		PR6F	LPR6F-A		PR6F-CS851	90		9 male	Crab Trap	Missing right claw	< 114 mm						7.5	L. AA-CSITI-COMpos		HT-sample done across reaches and using crabs missing claws HT-sample done across reaches and using crabs missing claws
LPR		PR6F	LPR6F-B	LPR6F-B7 LF	PR6F-CS852	116		32 male	Crab Trap	Missing left claw	Missing one claw						6.9	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing claws

Table A2. Proposed composite samples for blue crab

i LP	PR6F PR6F PR6F PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	Trap ID LPR6F-A LPR6F-A LPR6F-B LPR6F-B LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B LPR6G-B	Trap Attempt ID LPR6F-A9 LPR6F-A9 LPR6F-B9 LPR6G-C2 LPR6G-A3 LPR6G-C3 LPR6G-A4 LPR6G-A5 LPR6G-A5 LPR6G-A5	Specimen ID LPR6F-CS874 LPR6F-CS876 LPR6F-CS879 LPR6G-CS190 LPR6G-CS206 LPR6G-CS208	(g) 74	.ength												
LP L	PR6F PR6F PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6F-A LPR6F-B LPR6G-C LPR6G-C LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6F-A9 LPR6F-A9 LPR6F-B9 LPR6G-C2 LPR6G-A3 LPR6G-C3 LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A5 LPR6G-A6	LPR6F-CS874 LPR6F-CS876 LPR6F-CS879 LPR6G-CS190 LPR6G-CS206		ciigui	Collection		Reason for exclusion from	Estimated	Estimated soft tissue	Estimated Muscle/HP	Estimated Carcass	Estimated Muscle-	Estimated HP-only	Composite ID (tissue	Composite ID (tissue	
LP L	PR6F PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6F-A LPR6F-B LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6F-A9 LPR6F-B9 LPR6G-C2 LPR6G-A3 LPR6G-C3 LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A6	LPR6F-CS876 LPR6F-CS879 LPR6G-CS190 LPR6G-CS206		(mm) Gend	er Method	Comments	composite?	WB weight	WB weight	weight	weight	only weight	weight	type 1)	type 2)	Composite Notes
LP L	PR6F PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6F-B LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6F-B9 LPR6G-C2 LPR6G-A3 LPR6G-C3 LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A6	LPR6F-CS879 LPR6G-CS190 LPR6G-CS206		112 male	Crab Trap	Missing right claw	< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6G-C2 LPR6G-A3 LPR6G-C3 LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A6	LPR6G-CS190 LPR6G-CS206	36	77 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-A LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6G-A3 LPR6G-C3 LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A6	LPR6G-CS206	58	100 female	Crab Trap	Missing left leg	< 114 mm									HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-C LPR6G-A LPR6G-C LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6G-C3 LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A6		84	110 male	Crab Trap	Missing left swimmerette	< 114 mm									HT-sample done across reaches and using crabs missing claw
	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-A LPR6G-A LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6G-A4 LPR6G-C4 LPR6G-A5 LPR6G-A6	LPR6G-CS208	66	108 male	Crab Trap		< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-C LPR6G-A LPR6G-B LPR6G-A LPR6G-A LPR6G-B	LPR6G-C4 LPR6G-A5 LPR6G-A6		106	112 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-A LPR6G-B LPR6G-A LPR6G-A LPR6G-B	LPR6G-A5 LPR6G-A6	LPR6G-CS233	182	161 male	Crab Trap	Missing right claw	Missing one claw						9.6	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-A LPR6G-B LPR6G-A LPR6G-B	LPR6G-A6	LPR6G-CS239	80	109 male	Crab Trap	Missing left claw and left leg	< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing claw
LP L	PR6G PR6G PR6G PR6G PR6G PR6G	LPR6G-B LPR6G-A LPR6G-B		LPR6G-CS252	84	109 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP	PR6G PR6G PR6G PR6G PR6G	LPR6G-A LPR6G-B		LPR6G-CS836	62	98 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP	PR6G PR6G PR6G PR6G	LPR6G-B	LPR6G-B6	LPR6G-CS839	52	93 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP LP LP LP LP LP LP LP	PR6G PR6G PR6G		LPR6G-A8	LPR6G-CS863	74	110 male	Crab Trap		< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing claw
LP LP LP LP LP LP LP LP	PR6G PR6G PR6G		LPR6G-B8	LPR6G-CS864	94	111 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP LP LP LP LP LP LP	R6G R6G		LPR6G-A8	LPR6G-CS869	158	146 male	Crab Trap	Missing left claw	Missing one claw						8.2	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing claw
LP LP LP LP	R6G	LPR6G-A	LPR6G-A9		68	97 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP LP LP		LPR6G-A		LPR6G-CS891	85	113 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP LP		LPR6H-A		IPR6H-CS215	70	105 male	Crab Trap	Missing right claw	< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing claw
LP LP	nncu.	I PR6H-A	LPR6H-A4	LPR6H-CS240	94	110 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
LP		LPR6H-R	LPR6H-R5		88			Missing left leg and left swimmerette										
				LPR6H-CS246		102 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
		LPR6H-A	LPR6H-A7	LPR6H-CS855	74	99 male	Crab Trap	Left spine damaged	< 114 mm									HT-sample done across reaches and using crabs missing claw
	PR6J	LPR6J-C	LPR6J-C4	LPR6J-CS241	66	101 male	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
	PR6K	LPR6K-A	LPR6K-A2	LPR6K-CS200	54	95 male	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing claw
	PR6N	LPR6N-A		LPR6N-CS201	160	145 male	Gillnet	Damaged abdominal apron, missing left swi										HT-sample done across reaches and using crabs missing claw
	PR7F	LPR7F-C		LPR7F-CS177	72	104 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing clav
	PR7F	LPR7F-C		LPR7F-CS179	86	120 female	Crab Trap	Missing right claw	Missing one claw						5.8	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing clav
LP	R7F	LPR7F-A	LPR7F-A3	LPR7F-CS205	58	103 male	Crab Trap	Missing left claw	< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing clav
LP	R7G	LPR7G-A	LPR7G-A1	LPR7G-CS170	130	155 male	Crab Trap	Missing a leg on each side, missing both cla							9.0	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing clav
LP	R7G	LPR7G-C		LPR7G-CS171	84	110 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing clav
LP	R7G	LPR7G-C	LPR7G-C1	LPR7G-CS176	128	131 male	Crab Trap	Missing left claw	Missing one claw						6.8	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing clav
I P	R7G	I PR7G-A	LPR7G-A2	LPR7G-CS192	86	120 female	Crab Tran	Missing right claw	Missing one claw							LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing clav
	R7G	LPR7G-C	LPR7G-C3	LPR7G-CS217	42	98 female	Crab Trap	Missing right claw	< 114 mm (also missing one claw)						5.0	Li iix compos		HT-sample done across reaches and using crabs missing clav
	R7G	LPR7G-C	LPR7G-C5	LPR7G-CS260	164	151 male	Crab Trap	Missing right claw	Missing one claw						0.7	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing cla
	R7G	LPR7G-A	LPR7G-A5	LPR7G-CS263	76	99 male	Crab Trap		< 114 mm						0.7	EFIX-CSITI-COMpos		HT-sample done across reaches and using crabs missing clav
	R7H	LPR7H-B	LPR7H-B2		106				< 114 mm (also damage to crab)									HT-sample done across reaches and using crabs missing clar HT-sample done across reaches and using crabs missing clar
	R7H		LPR7H-B2	LPR7H-CS195	92	100 male 130 male	Crab Trap Crab Trap								6.7	LPRX-CSHT-Comp65		
		LPR7H-A		LPR7H-CS222					Missing both claws						6.7	LPKX-CSH1-Compos		HT-sample done across reaches and using crabs missing clav
	R7H	LPR7H-B	LPR7H-B5	LPR7H-CS248	100	109 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing clav
	PR7H	LPR7H-B	LPR7H-B5	LPR7H-CS258	80	112 male	Crab Trap		< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing clav
	PR7I	LPR7I-A	LPR7I-A2	LPR7I-CS191	56	95 male	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing clav
	PR7I	LPR7I-A	LPR7I-A4	LPR7I-CS235	86	106 male	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing clav
	PR7I	LPR7I-B	LPR7I-B5	LPR7I-CS261	48	91 female	Crayfish Trap	Missing both claws and right swimmerette										HT-sample done across reaches and using crabs missing clar
	PR7J	LPR7J-B	LPR7J-B4	LPR7J-CS236	48	91 female	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing clar
	PR7K	LPR7K-C	LPR7K-C4	LPR7K-CS242	26	65 male	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing clar
	PR7K	LPR7K-A	LPR7K-A5	LPR7K-CS251	70	102 male	Crayfish Trap		< 114 mm									HT-sample done across reaches and using crabs missing clar
	R7L	LPR7L-A	LPR7L-A2	LPR7L-CS184	118	140 male	Gillnet		Missing one claw							LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing clav
	R7L	LPR7L-A	LPR7L-A2	LPR7L-CS185	148	148 male	Gillnet	Missing right claw	Missing one claw							LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing clar
LP	PR7M	LPR7M-A	LPR7M-A3	LPR7M-CS204	134	140 male	Gillnet	Missing left claw	Missing one claw						7.7	LPRX-CSHT-Comp65		HT-sample done across reaches and using crabs missing cla
LP	PR8H	LPR8H-A	LPR8H-A4	LPR8H-CS807	37	88 female	Crayfish Trap	Missing right claw, right leg	< 114 mm (also missing one claw)									HT-sample done across reaches and using crabs missing clar
LP	PR8J	LPR8J-B	LPR8J-B2	LPR8J-CS771	118	127 male	Crab Trap	Missing left claw	Missing one claw						6.5	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws
LP	PR8J	LPR8J-C	LPR8J-C3	LPR8J-CS775	180	164 male	Crab Trap	Missing left claw	Missing one claw						9.9	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws
LP	PR8J	LPR8J-B	LPR8J-B3	LPR8J-CS777	214	158 male	Crab Trap	Damaged right claw	Damage to crab noted									HT-sample done across reaches and using crabs missing clar
	PR8I	LPR8J-A	I PRSI-A4	LPR8J-CS804	90	119 male	Crab Trap	Both claws and right leg missing	Missing both claws						5.7	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws
LP.					130	149 male	Crab Trap	Both claws and right leg missing	Missing both claws							LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws
	R8J	LPR8J-B	LPR8J-B4	LPR8J-CS805		94 male	Crab Trap		< 114 mm									HT-sample done across reaches and using crabs missing class
LP				LPR8J-CS805 LPR8K-CS758	56			Missing right claw and 2 right legs	Missing one claw									
LP LP	PR8J	LPR8J-B	LPR8J-B4		56 170	159 male	Crab Trap								9.4	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws
LP LP	PR8J PR8K PR8K	LPR8J-B LPR8K-C	LPR8J-B4 LPR8K-C1 LPR8K-A2	LPR8K-CS758	170	159 male 119 male	Crab Trap									LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		
LP LP LP	PR8J PR8K PR8K PR8K	LPR8J-B LPR8K-C LPR8K-A LPR8K-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764		119 male	Crab Trap		Missing both claws									HT-sample done across locations using crabs missing claws
LP LP LP LP	PR8J PR8K PR8K	LPR8J-B LPR8K-C LPR8K-A	LPR8J-B4 LPR8K-C1 LPR8K-A2	LPR8K-CS758 LPR8K-CS763	170 86		Crab Trap Crab Trap	Missing both claws	Missing both claws < 114 mm						5.7	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla
LP LP LP LP	PR8J PR8K PR8K PR8K PR8K PR8K	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS767	170 86 88 204	119 male 111 male 165 male	Crab Trap Crab Trap Crab Trap	Missing both claws Missing left claw	Missing both claws < 114 mm Missing one claw						5.7			HT-sample done across locations using crabs missing claws
LP LP LP LP LP LP	PR8J PR8K PR8K PR8K PR8K PR8K PR8K PR8K	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B LPR8L-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8L-CS821	170 86 88 204 88	119 male 111 male 165 male 107 male	Crab Trap Crab Trap Crab Trap Crab Trap	Missing both claws Missing left claw	Missing both claws < 114 mm Missing one claw < 114 mm						5.7 10.0	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla
LP LP LP LP LP	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSL PRSM	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B LPR8L-A LPR8M-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8L-CS821 LPR8M-CS818	170 86 88 204 88 182	119 male 111 male 165 male 107 male 156 male	Crab Trap Crab Trap Crab Trap Crab Trap Crab Trap	Missing both claws Missing left claw Missing left claw	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw						5.7 10.0 9.1	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw
LP	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSL PRSM	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B LPR8L-A LPR8M-A LPR8M-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5 LPR8M-A5	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8K-CS821 LPR8M-CS818 LPR8M-CS819	170 86 88 204 88 182 81	119 male 111 male 165 male 107 male 156 male 114 male	Crab Trap	Missing both claws Missing left claw	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw Missing one claw Missing both claws						5.7 10.0 9.1	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing daws
LP LP LP LP LP LP	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B LPR8L-A LPR8M-A LPR8M-A LPR8M-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5 LPR8M-A5 LPR8M-A5 LPR8M-A5 LPR8M-A5	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8K-CS821 LPR8M-CS818 LPR8M-CS819 LPR8M-CS819	170 86 88 204 88 182 81 76	119 male 111 male 165 male 107 male 156 male 114 male 106 male	Crab Trap	Missing both claws Missing left claw Missing left claw Missing both claws and left leg	Missing both claws < 114 mm Missing one claw < 114 mm Missing one daw Missing one claw Missing both claws < 114 mm						5.7 10.0 9.1 5.3	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across locations using crabs missing claws sample done across reaches and using crabs missing claws HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing claws
LP L	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B LPR8L-A LPR8M-A LPR8M-A LPR8M-B LPR8M-B	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5 LPR8M-A5 LPR8M-B5 LPR8M-B5	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8L-CS821 LPR8M-CS818 LPR8M-CS819 LPR8M-CS820 LPR8M-CS779	170 86 88 204 88 182 81 76	119 male 111 male 165 male 107 male 156 male 114 male 106 male 160 male	Crab Trap Gillnet	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing	Missing both claws < 114 mm Missing one claw < 114 mm Missing one daw Missing one daw Missing both claws < 114 mm Missing one claw						5.7 10.0 9.1 5.3 9.5	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw
LP L	PR8J PR8K PR8K PR8K PR8K PR8K PR8K PR8K PR8K	LPR8J-B LPR8K-C LPR8K-A LPR8K-A LPR8K-B LPR8K-B LPR8L-A LPR8M-A LPR8M-A LPR8M-B LPR8M-B LPR8R-A LPR8R-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5 LPR8M-A5 LPR8M-B5 LPR8M-B5 LPR8R-A3 LPR8R-A3	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8L-CS821 LPR8M-CS818 LPR8M-CS819 LPR8M-CS829 LPR8M-CS820 LPR8M-CS820 LPR8R-CS779 LPR8R-CS780	170 86 88 204 88 182 81 76 192	119 male 111 male 165 male 107 male 156 male 114 male 106 male 160 male 144 male	Crab Trap Gillnet Gillnet	Missing both claws Missing left claw Missing left claw Missing ight claws and left leg Left claw missing Missing right claw	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw Missing both claws < 114 mm Missing both claws < 114 mm Missing one claw Missing one claw Missing one claw						5.7 10.0 9.1 5.3 9.5	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing class HT-sample done across reaches and using crabs missing class HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing claws HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws
LP L	PR8J PR8K PR8K PR8K PR8K PR8K PR8K PR8K PR8K	LPR8J-B LPR8K-C LPR8K-A LPR8K-B LPR8K-B LPR8K-B LPR8L-A LPR8M-A LPR8M-A LPR8M-B LPR8R-A LPR8R-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5 LPR8M-A5 LPR8M-B3 LPR8R-A3 LPR8R-A3 LPR8R-A3	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8L-CS821 LPR8M-CS818 LPR8M-CS819 LPR8M-CS820 LPR8R-CS779 LPR8R-CS779 LPR8R-CS780 LPR8R-CS780	170 86 88 204 88 182 81 76 192 144	119 male 111 male 165 male 107 male 156 male 114 male 106 male 160 male 144 male 111 male	Crab Trap Gillnet Gillnet Gillnet	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing right claw	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw Missing one claw Missing both claws < 114 mm Missing one claw Missing one claw Missing one claw < 114 mm						5.7 10.0 9.1 5.3 9.5 8.0	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing clab HT-sample done across reaches and using crabs missing all HT-sample done across reaches and using crabs missing clab HT-sample done across reaches and using crabs missing clab HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw HT-sample done across reaches and using crabs missing claw
LP L	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM PRSM PRSR PRSR PRSR	LPR8J-B LPR8K-C LPR8K-A LPR8K-B LPR8K-B LPR8L-A LPR8M-A LPR8M-A LPR8M-B LPR8R-A LPR8R-A LPR8R-A	LPR8J-B4 LPR8K-C1 LPR8K-A2 LPR8K-A2 LPR8K-B2 LPR8K-B3 LPR8L-A5 LPR8M-A5 LPR8M-A5 LPR8M-A5 LPR8M-A5 LPR8R-A3 LPR8R-A3 LPR8R-A3 LPR8R-A3 LPR8R-A3 LPR8R-A3	LPR8K-CS758 LPR8K-CS763 LPR8K-CS764 LPR8K-CS767 LPR8K-CS785 LPR8M-CS811 LPR8M-CS818 LPR8M-CS819 LPR8M-CS820 LPR8R-CS779 LPR8R-CS780 LPR8R-CS781 LPR8R-CS781	170 86 88 204 88 182 81 76 192 144 82	119 male 111 male 165 male 107 male 156 male 114 male 106 male 160 male 144 male 111 male 145 male	Crab Trap Gillnet Gillnet Gillnet Gillnet	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing right claw Missing left claw Missing left claw, left leg	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw Missing both claws < 114 mm Missing one claw Missing one claw < 114 mm Missing one claw < 114 mm Missing one claw						5.7 10.0 9.1 5.3 9.5 8.0	LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66 LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claw HT-sample done across reaches and using crabs missing cla HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claws HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing claws HT-sample done across reaches and using crabs missing claws HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws HT-sample done across locations using crabs missing claws
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	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM PRSR PRSR PRSR PRSR	LPRSJ-B LPRSK-C LPRSK-A LPRSK-B LPRSK-B LPRSK-B LPRSM-A LPRSM-A LPRSM-A LPRSR-A LPRSR-A LPRSR-A LPRSR-A LPRSR-A LPRSS-A LPRSS-A LPRSS-A LPRSS-A	PRBJ-B4 LPRBK-C1 LPRBK-A2 LPRBK-B2 LPRBK-B3 LPRBL-B3 LPRBL-B5 LPRBM-B5 LPRBM-B5 LPRBM-B1 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A4 LPRBS-A1 LPRBS-A1 LPRBS-A1 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A4 LPRBS-A3	LPR8K-C5758 LPR8K-C5763 LPR8K-C5764 LPR8K-C5764 LPR8K-C5764 LPR8K-C5765 LPR8K-C5785 LPR8K-C5821 LPR8M-C5821 LPR8M-C5820 LPR8R-C5790 LPR8R-C5791 LPR8R-C5781 LPR8R-C5782 LPR8R-C5782 LPR8R-C5781 LPR8R-C5782 LPR8R-C5782 LPR8R-C5782 LPR8R-C5793 LPR8S-C5793 LPR8S-C5801	170 86 88 204 88 182 81 76 192 144 82 122 73 166 126	119 male 111 male 165 male 107 male 156 male 114 male 106 male 144 male 111 male 114 male 115 male 117 male 118 male 119 male 127 male 124 male	Crab Trap Gillnet	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing poth claws and left leg Missing both claws and 2 right legs; damaged Missing left claw, left leg Missing left claw and 7 gipt legs; damaged Missing left claw and right swimmerette Missing right claw, damaged right swimmer Missing right claw Left claw included; recently molted	Missing one claw < 114 mm Missing one claw < 114 mm Missing one claw Kissing one claw Missing one claw						5.7 10.0 9.1 5.3 9.5 8.0 8.1 5.3 9.8 9.4 6.5	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claw HT-sample done across reaches and using crabs missing cla HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw
LP L	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM PRSM PRSR PRSR PRSR	LPRSI-B LPRSK-C LPRSK-A LPRSK-A LPRSK-B LPRSI-A LPRSM-A LPRSM-A LPRSM-A LPRSM-A LPRSR-A LPRSR-A LPRSR-A LPRSR-A LPRSR-A LPRSR-A LPRSS-A LPRSS-A LPRSS-A LPRSS-A	PRBJ-B4 LPRBK-C1 LPRBK-A2 LPRBK-B2 LPRBK-B3 LPRBL-B3 LPRBL-B5 LPRBM-B5 LPRBM-B5 LPRBM-B1 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A4 LPRBS-A1 LPRBS-A1 LPRBS-A1 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A4 LPRBS-A3	LPRBK-C5758 LPRBK-C5763 LPRBK-C5763 LPRBK-C5767 LPRBK-C5767 LPRBK-C5767 LPRBK-C5785 LPRBK-C5821 LPRBM-C5821 LPRBM-C5820 LPRBR-C5779 LPRBR-C5780 LPRBR-C5791 LPRBS-C5793 LPRBV-C5801 LPRBW-C5801 LPRBW-C5810	170 86 88 88 204 88 182 11 76 192 144 82 122 73 166 126 102 90	119 male 111 male 165 male 107 male 156 male 114 male 106 male 160 male 114 male 111 male 115 male 117 male 118 male 119 male 120 male 141 male 142 male 143 male 144 male 145 male 147 male 148 male	Crab Trap Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Boat Electrofishi Boat Electrofishi Boat Electrofishi	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing poth claws and left leg Missing both claws and 2 right legs; damaged Missing left claw, left leg Missing left claw and 7 gipt legs; damaged Missing left claw and right swimmerette Missing right claw, damaged right swimmer Missing right claw Left claw included; recently molted	Missing one claw <114 mm Missing one claw <114 mm Missing one claw						5.7 10.0 9.1 5.3 9.5 8.0 8.1 5.3 9.8 9.4 6.5	LPR8-CSHT-Comp66		HT-sample done across locations using crabs missing claw HT-sample done across reaches and unitige rabs missing cla HT-sample done across reaches and unitige rabs missing claw HT-sample done across reaches and unitige rabs missing claw HT-sample done across reaches and unitige rabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw
	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM PRSR PRSR PRSR PRSR	LPRSI-B LPRSK-A LPRSK-A LPRSK-A LPRSK-B LPRSK-B LPRSK-A LPRSM-A LPRSM-A LPRSM-A LPRSR-	PRBJ-B4 PRBK-C1 PRBK-A2 PRBK-B2 PRBK-B2 PRBK-B3 PRBL-A5 PRBM-A5 PRBM-A5 PRBM-A3 PRBR-A3 PRBR-A3 PRBR-A4 PRBR-A4 PRBR-A5 PRBR-A3 PRBR-A4	LPRBK-C5758 LPRBK-C5763 LPRBK-C5763 LPRBK-C5767 LPRBK-C5767 LPRBK-C5767 LPRBK-C5785 LPRBK-C5821 LPRBM-C5821 LPRBM-C5820 LPRBR-C5779 LPRBR-C5780 LPRBR-C5791 LPRBS-C5793 LPRBV-C5801 LPRBW-C5801 LPRBW-C5810	170 86 88 88 204 88 182 81 76 192 144 82 122 73 166 126 102 90 90 90	119 male 111 male 165 male 107 male 156 male 114 male 106 male 160 male 144 male 111 male 114 male 114 male 127 male 127 male 124 male 124 male 124 male 125 male	Crab Trap Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Boat Electrofishi Boat Electrofishi Boat Electrofishi Boat Electrofishi	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing both claws and 2 right legs; damage Missing left claw, left leg Missing both claws and 2 right legs; damage Missing left claw and right swimmerette Missing right claw, damaged right swimmer Missing right claw, damaged right swimmer Missing right claw, damaged right swimmer Missing right claw, diamaged right swimmer Missing right claw, right leg, and left leg Missing right claw, right leg, and left leg	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw Soft shell crab Missing one claw < 114 mm Missing both claws						5.7 10.0 9.1 5.3 9.5 8.0 8.1 5.3 9.8 9.4 6.5	LPR8-CSHT-Comp66	HT-sample done across locations using crabs missing claw HT-sample done across reaches and unitige rabs missing cla HT-sample done across reaches and unitige rabs missing claw HT-sample done across reaches and unitige rabs missing claw HT-sample done across reaches and unitige rabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw	
LP L	PRSJ PRSK PRSK PRSK PRSK PRSK PRSL PRSM PRSM PRSM PRSM PRSR PRSR PRSR PRSR	LPRSI-B LPRSK-C LPRSK-A LPRSK-B LPRSK-B LPRSK-B LPRSH-A LPRSM-A LPRSM-A LPRSR-	LPRBI-B4 LPRBK-A2 LPRBK-A2 LPRBK-A2 LPRBK-B3 LPRBI-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBR-A3 LPRBR-A5 LPRBW-A5	IPRBK-C5758 IPRBK-C5763 IPRBK-C5763 IPRBK-C5767 IPRBK-C5767 IPRBK-C5767 IPRBK-C5785 IPRBK-C5821 IPRBK-C5821 IPRBK-C5821 IPRBK-C5821 IPRBK-C5820 IPRBK-C5790 IPRBK-C5790 IPRBK-C5790 IPRBK-C5780 IPRBK-C5780 IPRBK-C5780 IPRBK-C5781 IPRBK-C5791 IPRBK-C5791 IPRBK-C5791 IPRBK-C5791 IPRBK-C5791 IPRBK-C5801 IPRBK-C5801 IPRBK-C5810 IPRBK-C5760	170 86 88 88 204 88 182 81 76 192 124 122 122 122 102 90 90 54	119 male 111 male 165 male 107 male 156 male 114 male 160 male 114 male 111 male 114 male 114 male 115 male 114 male 114 male 114 male 127 male 127 male 124 male 127 male 128 male 129 male 133 male 131 male 131 male	Crab Trap Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Boat Electrofishi Boat Beachyack Electrofishi Boat Beachyachyack Electrofishi Boat Beachyachyachyachyachyachyachyachyachyachy	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing poth claws and left leg Missing both claws and 2 right legs; damage Missing left claw, left leg Missing left claw, left leg Missing left claw and right swimmerette Missing right claw, damaged right swimmer Missing right claw Left claw included; recently molted (Missing right claw, right leg, and left leg) (Missing both claws Left claw included; recently molted	Missing both claws < 114 mm Missing one claw < 114 mm Missing both claws < 114 mm Missing both claws < 114 mm Missing one claw Missing one claw < 114 mm Missing one claw Soft shell crab Missing one claw < 114 mm Missing both claws < 114 mm (also missing one claw)						5.7 10.0 9.1 5.3 9.5 8.0 8.1 5.3 9.8 9.4 6.5	LPR8-CSHT-Comp66	HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw	
	PRSJ PRSK PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM PRSR PRSR PRSR PRSR	LPRSI-B LPRSK-A LPRSK-A LPRSK-B LPRSK-B LPRSK-B LPRSK-A LPRSM-A LPRSM-A LPRSM-A LPRSR-	LPRB-B4 LPRBK-C1 LPRBK-A2 LPRBK-A2 LPRBK-B3 LPRBK-B3 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A4 LPRBS-A1 LPRBS-A1 LPRBS-A1 LPRBS-A2 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A3 LPRBS-A4 LPRBS-A3 LPRBS-A5 LPRBV-A5 LPRBV-A5 LPRBV-A5 LPRBV-A5 LPRBV-A5 LPRBV-A1 LPRBW-A5 LPRBV-A1 LPRBW-A5 LPRB	LPRBK-C5758 LPRBK-C5763 LPRBK-C5763 LPRBK-C5767 LPRBK-C5767 LPRBK-C5787 LPRBK-C5787 LPRBK-C5821 LPRBM-C5818 LPRBM-C5818 LPRBM-C5818 LPRBM-C5820 LPRBR-C5779 LPRBR-C5780 LPRBR-C5780 LPRBR-C5780 LPRBR-C5781 LPRBR-C5781 LPRBR-C5781 LPRBR-C5793 LPRBR-C5793 LPRBR-C5810 LPRBK-C5810 LPRBW-C5810 LPRBW-C5811 LPRBW-C5815	170 86 88 88 204 88 182 81 76 192 144 82 122 73 166 126 102 90 90 90	119 male 111 male 165 male 107 male 156 male 114 male 160 male 144 male 114 male 115 male 127 male 129 male 124 male 129 male 124 male 133 male	Crab Trap Gillnet Gillnet Gillnet Gillnet Gillnet Gillnet Boat Electrofishi Boat Electrofishi Boat Electrofishi Boat Electrofishi	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing both claws and 2 right legs; damage Missing left claw, left leg Missing left claw and right legs; damage Missing left claw and right swimmerette Missing right claw, damaged right swimmer Missing right claw, damaged right swimmer Missing right claw, damaged right swimmer Missing right claw, right leg, and left leg Missing right claw, right leg, and left leg Missing both claws Left claw missing Missing both claws Left claw missing	Missing both claws < 114 mm Missing one claw < 114 mm Missing one claw Soft shell crab Missing one claw < 114 mm Missing one claw < 114 mm (also missing one claw) < 114 mm (also missing one claw)						5.7 10.0 9.1 5.3 9.5 8.0 8.1 5.3 9.8 9.4 6.5	LPR8-CSHT-Comp66	HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claw	
	PRSJ PRSK PRSK PRSK PRSK PRSK PRSM PRSM PRSM PRSM PRSR PRSR PRSR PRSR	LPRSI-B LPRSK-C LPRSK-A LPRSK-B LPRSK-B LPRSH-A LPRSM-A LPRSM-A LPRSM-A LPRSR-A LPRSR-A LPRSR-A LPRSR-A LPRSS-	LPRB-B4 LPRBK-C1 LPRBK-A2 LPRBK-B2 LPRBK-B3 LPRBK-B3 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A5 LPRBM-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A3 LPRBR-A4 LPRBS-A3 LPRBR-A4 LPRBS-A1 LPRBS-A3 LPRBR-A4 LPRBS-A1 LPRBS-A3 LPRBR-A4 LPRBS-A1 LPRBS-A3 LPRBR-A4 LPRBS-A3 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A5 LPRBS-A1 LPRBS-A5 LPRBS-A1 LPRBS-A3 LPRBS-A1 LPRBS-A3 LPRBS-A1 LPRBS-A3 LPRBS-A1 LPRBS-A1 LPRBS-A3 LPRBS-A3 LPRBS-A1 LPRBS-A3 LPRB	LPRBK-C5758 LPRBK-C5763 LPRBK-C5763 LPRBK-C5767 LPRBK-C5767 LPRBK-C5787 LPRBK-C5781 LPRBK-C5821 LPRBK-C5821 LPRBK-C5821 LPRBK-C5821 LPRBK-C5821 LPRBK-C5821 LPRBK-C5821 LPRBK-C5821 LPRBK-C5781 LPRBK-C5782 LPRBK-C5782 LPRBK-C5783 LPRBK-C5783 LPRBK-C5783 LPRBK-C5783 LPRBK-C5783 LPRBK-C5783 LPRBK-C5783 LPRBK-C5810 LPRBK-C5761	170 86 88 204 88 182 81 76 192 144 82 22 122 73 166 126 102 90 90 90 54	119 male 111 male 165 male 107 male 136 male 106 male 106 male 106 male 114 male 144 male 114 male 145 male 114 male 159 male 127 male 124 male 133 male 107 male 94 male	Crab Trap Gillnet Boat Electrofishi	Missing both claws Missing left claw Missing left claw Missing both claws and left leg Left claw missing Missing both claws and 2 right legs; damage Missing left claw, left leg Missing left claw and right legs; damage Missing left claw and right swimmerette Missing right claw, damaged right swimmer Missing right claw, damaged right swimmer Missing right claw, damaged right swimmer Missing right claw, right leg, and left leg Missing right claw, right leg, and left leg Missing both claws Left claw missing Missing both claws Left claw missing	Missing both claws < 114 mm Missing one claw < 114 mm Missing both claws < 114 mm Missing both claws < 114 mm Missing one claw Missing one claw < 114 mm Missing one claw Soft shell crab Missing one claw < 114 mm Missing both claws < 114 mm (also missing one claw)						5.7 10.0 9.1 5.3 9.5 8.0 8.1 5.3 9.8 9.4 6.5	LPR8-CSHT-Comp66	HT-sample done across locations using crabs missing claws HT-sample done across reaches and using crabs missing cla HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across reaches and using crabs missing claw HT-sample done across locations using crabs missing claws	

					Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR1A-A	Minnow Trap	598862	685983	3	,	
LPR1A-B	Minnow Trap	598921	685982	4		
LPR1A-C	Minnow Trap	598972	685982	5		
LPR1AA-A	Minnow Trap	598775	686320	5	6	
LPR1AA-B	Minnow Trap	598813	686336	6	7	
LPR1AA-C	Minnow Trap	598850	686350	7	2	
LPR1B-A	Minnow Trap	598145	686254	2		1
LPR1B-B	Minnow Trap	598185	686213	1		
LPR1B-C	Minnow Trap	598209	686193	3		
LPR1BB-A	Minnow Trap	598257	686353	2	3	
LPR1BB-B	Minnow Trap	598312	686378	2	2	
LPR1BB-C	Minnow Trap	598338	686356	3		
LPR1D-A	Minnow Trap	597403	690438	3	18	
LPR1D-B	Minnow Trap	597400	690423	4		
LPR1D-C	Minnow Trap	597396	690412	2		1
LPR1G-A	Trotline	597299	689861	2	4	
LPR1G-B	Trotline	597272	689789	2	1	
LPR1G-C	Trotline	597285	689722	5	1	
LPR1H-A	Trotline	596678	687147	2	1	
LPR1H-B	Trotline	596643	687098	1		
LPR1H-C	Trotline	596611	687015	1	1	
LPR1I-A	Gillnet	597827	691568	9	60	1
LPR1J-A	Gillnet	597398	688339	10	87	3
LPR1K-A	Gillnet	596645	685592	12	88	2
LPR1L-A	Crab Trap	598999	685962	2	12	
LPR1L-B	Crab Trap	598956	685956	2	9	
LPR1M-A	Crab Trap	598210	686152	2	9	
LPR1M-B	Crab Trap	598174	686182	1	8	
LPR1M-C	Crab Trap	598135	686244		9	
LPR1N-A	Crab Trap	597395	690389		4	
LPR1N-B	Crab Trap	597387	690368		9	
LPR1N-C	Crab Trap	597378	690344		2	
LPR1O-A	Eel Trap	598904	685938	7		
LPR1O-B	Eel Trap	598990	685941	9	1	3
LPR1O-C	Eel Trap	599042	685966	7		
LPR1P-A	Eel Trap	598131	686206	5		
LPR1P-B	Eel Trap	598165	686155	4	1	
LPR1P-C	Eel Trap	598236	686094	9	C	1
LPR1Q-A	Eel Trap	597397	690396	7	6	1
LPR1Q-B	Eel Trap	597383	690365		43	
LPR1R-A	Dip Net	598449	686449 695100	2	5	
LPR2B-A LPR2B-B	Minnow Trap Minnow Trap	596928 596925	695100	3 1	63	
LPR2B-C	Minnow Trap	596907	695131		11	
LPR2C-A	Minnow Trap	596907	695226	3	2	1
LPR2C-B	Minnow Trap	594680	695226	7	2	I
LPR2C-B	Minnow Trap	594680	695222	5		
LPR2E-A	Minnow Trap	594709	692885	6	1	1
LPR2E-B	Minnow Trap	590126	692885	10	1	1
LPR2E-C	Minnow Trap	590172	692915	9	1	
LPR2F-A	Trotline	590211	692663	<u> </u>	1	
LPR2F-B	Trotline	590324	692681	1	1	
LPR2G-A	Trotline	590394	695220	2	1	
LPR2H-B	Trotline	596999	695616	2	1	
LPR2H-C	Trotline	597072	695600	1	1	
LPR2I-A	Gillnet	590155	692581	8	30	
LPR2J-A	Gillnet	590155	695595	8 5	34	
LPR2J-A LPR2K-A	Gillnet	594631	695166	12	77	5
LPR2L-A	Crab Trap	596867	695157	14	7	J
LPR2L-B	Crab Trap	596860	695179		1	
LPR2L-B	Crab Trap	596847	695179		6	
	Crab Trap	596847	695184	1	2	
	NIAU HAU	J J J J J J J J J J J J J J J J J J J	U33448	1		
LPR2M-A LPR2M-B	Crab Trap	594545	695240		10	

					Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR2N-A	Crab Trap	590310	692957	2	6	
LPR2N-B	Crab Trap	590365	693000		6	
LPR2N-C	Crab Trap	590422	693046		9	
LPR2O-A	Eel Trap	596832	695194	5	1	
LPR2O-B	Eel Trap	596837	695196	8	3	1
LPR2O-C	Eel Trap	596813	695207	5	4	
LPR2P-A	Eel Trap	594464	695224	8		
LPR2P-B	Eel Trap	594418	695228	9		
LPR2P-C	Eel Trap	594383	695204	8		
LPR2Q-A	Eel Trap	590476	693104	8		
LPR2Q-B	Eel Trap	590510	693154	9		
LPR2Q-C	Eel Trap	590548	693209	8		
LPR2R-A	Dip Net	596083	695248	1	4	3
LPR3A-A	Minnow Trap	588537	692671	1	1	
LPR3A-B	Minnow Trap	588561	692644	1	2	
LPR3A-C	Minnow Trap	588560	692660	2	3	
LPR3B-A LPR3B-B	Minnow Trap Minnow Trap	587086 587129	692516 692517	2 1	3	
LPR3C-A	Minnow Trap	587129	694440	2	3	
LPR3C-C	Minnow Trap	585157	694491	2	3	
LPR3F-A	Crab Trap	584943	698212		4	
LPR3F-B	Crab Trap	584935	698184	2	4	
LPR3F-C	Crab Trap	584937	698223	2	3	
LPR3G-A	Crab Trap	584687	696034		4	
LPR3G-B	Crab Trap	584695	696006		5	
LPR3G-C	Crab Trap	584706	695966		6	
LPR3H-A	Crab Trap	585660	694238		6	
LPR3H-B	Crab Trap	585655	694258		2	
LPR3H-C	Crab Trap	585642	694274		2	
LPR3I-A	Eel Trap	585101	694752	2	2	
LPR3I-B	Eel Trap	585107	694727	1	2	
LPR3I-C	Eel Trap	585113	694700	3		
LPR3J-A	Eel Trap	585077	695935		1	
LPR3J-B	Eel Trap	585072	695956		3	
LPR3J-C	Eel Trap	585057	695993	1	2	
LPR3K-A	Eel Trap	584668	698342	1	3	
LPR3K-B	Eel Trap	584666	698315		2	
LPR3K-C	Eel Trap	584662	698283	1	5	
LPR3L-A	Trotline	585034	698912		2	
LPR3L-B	Trotline	585019	698886		3	
LPR3L-C	Trotline	584991	698910	2	3	
LPR3M-A	Gillnet	584798	697881	5	41	1
LPR3N-A	Gillnet	584921	695554	8	30	
LPR3O-A	Gillnet	588368	692495	14	90	7
LPR3P-A	Trotline	588105	692248		1	
LPR3P-B	Trotline	588111	692223	1	2	
LPR3P-C	Trotline	588161	692285		2	
LPR3Q-A	Trotline	585049	694994		1	
LPR3Q-B	Trotline	585068	694984		3	
LPR3Q-C	Trotline	585084	694997		1	
LPR4C-B	Minnow Trap	586719	704097		1	
LPR4D-A	Minnow Trap	587489	705720	2		
LPR4D-B	Minnow Trap	587496	705790		1	
LPR4D-C	Minnow Trap	587572	705839	2		
LPR4F-A	Crab Trap	587283	705973		1	
LPR4F-B	Crab Trap	587313	706034		3	
LPR4F-C	Crab Trap	587352	706120	1	5	
LPR4G-A	Crab Trap	586996	704092		4	
LPR4G-B	Crab Trap	587032	704128		7	
LPR4G-C	Crab Trap	587029	704104	1	2	
			////////		6	
LPR4H-A	Crab Trap	585274	700807			
	Crab Trap Crab Trap Crab Trap	585274 585272 585266	700807 700811 700764		4 3	

					Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR4I-C	Eel Trap	585243	700671		1	
LPR4J-B	Eel Trap	586874	703850	1		
LPR4J-C	Eel Trap	586871	703813	1	1	
LPR4L-A	Gillnet	585166	700324	5	15	
LPR4M-A	Trotline	585151	701600	2	1	
LPR4M-B	Trotline	585118	701504	1	3	
LPR4M-C	Trotline	585181	701661		2	
LPR4N-A	Trotline	587156	704379	4	3	
LPR4N-B	Trotline	587082	704273	1	2	
LPR4N-C	Trotline	587180	704463	2	2 10	
LPR4O-A LPR4P-A	Gillnet Gillnet	587268 588651	705741 707444	2	11	
LPR4Q-A	Trotline	589249	707444	Z	3	
LPR4Q-C	Trotline	589188	708213	1	1	
LPR4R-A	Boat Electrofishing	587094	705184	4	8	
LPR4S-A	Boat Electrofishing	588168	705442	2	18	2
LPR4T-A	Boat Electrofishing	589042	707878	2	18	
LPR5A-A	Minnow Trap	589448	707878		5	1
LPR5A-B	Minnow Trap	589436	709208		3	2
LPR5A-C	Minnow Trap	589416	709238		2	
LPR5B-B	Minnow Trap	590234	712386		1	1
LPR5B-C	Minnow Trap	590244	712406		2	
LPR5C-C	Minnow Trap	592011	717746		1	
LPR5E-A	Gillnet	589795	711734	3	16	
LPR5F-A	Trotline	589948	711839	-	2	
LPR5F-B	Trotline	589880	711711	3	3	
LPR5F-C	Trotline	589980	711904	1	2	
LPR5G-A	Gillnet	591330	714199	5	7	
LPR5H-A	Trotline	591608	715061	1	2	
LPR5H-B	Trotline	591553	714981		2	
LPR5H-C	Trotline	591631	715124		3	
LPR5I-A	Gillnet	591812	718376	2	6	
LPR5J-A	Trotline	592097	717356		2	
LPR5J-B	Trotline	592143	717261		2	
LPR5J-C	Trotline	592082	717440	2	2	
LPR5K-B	Crab Trap	589628	708970	1	1	
LPR5L-B	Eel Trap	589629	709115		1	
LPR5M-A	Crab Trap	590284	712972		4	
LPR5M-B	Crab Trap	590294	712998		6	
LPR5M-C	Crab Trap	590300	713002		4	
LPR5O-A	Crab Trap	591814	717645		9	
LPR5O-B	Crab Trap	591812	717668		10	
LPR5O-C	Crab Trap	591810	717693		3	
LPR5P-A	Eel Trap	591788	717782			1
LPR5P-B	Eel Trap	591778	717795	1	1	4
LPR5Q-A	Boat Electrofishing	592183	717297	4	45	1
LPR5R-A	Boat Electrofishing	592455	716313	2	31	2
LPR5S-A	Boat Electrofishing	589702	711831	6	18	1
LPR5T-A	Boat Electrofishing	589609	709404	3	25	1
LPR6A-C	Minnow Trap	592584	722334	1	1	
LPR6B-B	Minnow Trap	593382	723296 723324	1	1	
LPR6B-C LPR6C-A	Minnow Trap Minnow Trap	593417 594226	723324	1	1	
LPR6C-A	Minnow Trap	594226	723825		1	1
LPR6D-C	Minnow Trap	595166	723846	1		1
LPR6F-A	Crab Trap	592579	724121	1	20	
LPR6F-B	Crab Trap	592587	722307	1	7	
LPR6F-C	Crab Trap	592594	722410	1	1	
LPR6G-A	Crab Trap	593235	723579		14	
LPR6G-B	Crab Trap	593267	723582		3	
LPR6G-C	Crab Trap	593262	723569		9	
LPR6H-A	Crab Trap	595232	724124		5	
LPR6H-B	Crab Trap	595283	724160	1	6	1
LPR6I-A	Crayfish Trap	592606	722494		-	1

Trap ID LPR6I-B						
I DR6I-B	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
FL VOLD	Crayfish Trap	592600	722532	1	2	
LPR6J-A	Crayfish Trap	593319	723608		1	
LPR6J-C	Crayfish Trap	593402	723629		1	1
LPR6K-A	Crayfish Trap	595459	724229		1	
LPR6L-A	Gillnet	596201	724678	2	19	3
LPR6M-A	Gillnet	594051	723740	1	11	1
LPR6N-A	Gillnet	592325	722258	9	24	2
LPR6O-A	Trotline	596688	725981		1	
LPR6O-B	Trotline	596678	725967	1	1	
LPR6O-C	Trotline	596678	725904			1
LPR6P-A	Trotline	595771	724220	1	5	
LPR6P-B	Trotline	595841	724267	1		
LPR6P-C	Trotline	595891	724319		1	1
LPR6Q-A	Trotline	592194	721861		1	1
LPR6Q-B	Trotline	592201	721923	1	2	
LPR6R-A	Trotline	593804	723468		1	
LPR6R-B	Trotline	593857	723476	1	2 2	
LPR6R-C	Trotline	593899	723497	1		
LPR6S-A	Trotline Trotline	592481	722901 722923	1	3	
LPR6S-B LPR6S-C	Trotline	592495	722923	1	1 1	
LPR6V-A	Boat Electrofishing	592503 592459	721585	1	1	
LPR7A-A	Minnow Trap	596648	721383	1	1	
LPR7A-C	Minnow Trap	596769	728955	2		
LPR7B-B	Minnow Trap	596736	729280	1		
LPR7C-A	Minnow Trap	596686	733029	3		
LPR7C-B	Minnow Trap	596697	733065	2	1	
LPR7D-B	Minnow Trap	597441	734864		1	
LPR7E-A	Minnow Trap	597316	735371	1	1	
LPR7E-C	Minnow Trap	597308	735334	1	1	
LPR7F-A	Crab Trap	597445	734965		6	
LPR7F-B	Crab Trap	597453	734999		1	
LPR7F-C	Crab Trap	597452	735017		8	1
LPR7G-A	Crab Trap	597342	735289		9	
LPR7G-B	Crab Trap	597342	735269		5	
LPR7G-C	Crab Trap	597339	735250		13	
LPR7H-A	Crab Trap	596716	728849		2	1
LPR7H-B	Crab Trap	596780	728831		7	
LPR7H-C	Crab Trap	596737	728804		1	
LPR7I-A	Crayfish Trap	597472	735056		2	
LPR7I-B	Crayfish Trap	597479	735092		1	
LPR7I-C	Crayfish Trap	597496	735115		1	
LPR7J-B	Crayfish Trap	597335	735453		2	
LPR7J-C	Crayfish Trap	597338	735473		1	
LPR7K-A	Crayfish Trap	596730	728805		2	
LPR7K-C	Crayfish Trap	596772	728710		2	
LPR7L-A	Gillnet	597481	735489		37	1
LPR7M-A	Gillnet	596952	728472	4	21	
LPR7N-A	Trotline	597320	735075	3	1	
LPR7N-B	Trotline	597329	735030		1	
LPR7N-C	Trotline	597348	735158	1		
LPR7O-A	Trotline	596946	733355		1	
LPR7O-C	Trotline	596980	733527		1	
LPR7P-B	Trotline	596286	731502		1	
LPR7P-C	Trotline	596325	731594		1	
LPR7Q-A	Trotline	596587	729111		1	
LPR7Q-C	Trotline	596531	729221		2	
LPR7R-A	Boat Electrofishing	597139	734602			1
LPR7U-A	Boat Electrofishing	596913	728915			2
LPR8A-A	Minnow Trap	597559	737849	1		
LPR8A-C	Minnow Trap	597558	737808		1	
	Minnow Trap	599182	741745		2	
LPR8D-A LPR8D-C	Minnow Trap	599151	741744	1		

Table A3. Coordinates of Sampling Locations where Specimens Caught Number of			Number of Specimens	f Specimens		
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR8F-B	Minnow Trap	596950	745766	1		
LPR8G-B	Crayfish Trap	599034	741833	1		
LPR8H-A	Crayfish Trap	597535	737793		2	
LPR8H-B	Crayfish Trap	597536	737784	1		
LPR8I-B	Crayfish Trap	597810	744583	1		
LPR8J-A	Crab Trap	599110	741769		1	
LPR8J-B	Crab Trap	599098	741776		5	
LPR8J-C	Crab Trap	599083	741795		2	
LPR8K-A	Crab Trap	597509	737734	1	4	
LPR8K-B	Crab Trap	597504	737722		11	
LPR8K-C	Crab Trap	597505	737709		4	
LPR8L-A	Crab Trap	597798	744553		2	
LPR8M-A	Crab Trap	597014	745965	1	2	
LPR8M-B	Crab Trap	597003	745977	1	1	
LPR8P-A	Trotline	600701	738021	1		
LPR8P-B	Trotline	600758	737920	1		
LPR8P-C	Trotline	600715	737892	2		
LPR8Q-C	Trotline	599236	737597	1	1	
LPR8R-A	Gillnet	600828	738621	6	21	2
LPR8S-A	Gillnet	597833	738329	1	33	
LPR8T-C	Crayfish Trap	596976	745970	2		
LPR8U-A	Boat Electrofishing	600528	737366	12	27	2
LPR8V-A	Boat Electrofishing	599755	740370	8	77	3
LPR8W-A	Boat Electrofishing	599277	741575	10	23	5
LPR8X-A	Boat Electrofishing	599354	741619	8	26	4
LPR8Y-A	Backpack Electrofishing	596961	746132	9	111	1
LPR8Z-A	Backpack Electrofishing	595612	746920	7	392	5



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MEMORANDUM

To: Robert Law, de maximis, inc.

From: Shannon Katka, Mike Johns, Windward Environmental LLC

Subject: Revised Sample Analysis Plan for Catfish/Bullhead, Carp, Bass, White

Sucker, and Northern Pike Tissue for the Lower Passaic River Restoration

Project (Revised Fish Sample Analysis Plan, Part 1)

Date: May 21, 2010

This memorandum summarizes compositing considerations and proposes a revised plan for analyzing tissues collected during the late summer/early fall 2009 in the Lower Passaic River Study Area (LPRSA) in support of a human health risk assessment (HHRA) and an ecological risk assessment (ERA). The proposed sample analysis plan and recommendations are based on the discussions between the US Environmental Protection Agency (USEPA) and the Cooperating Parties Group (CPG), the *Quality Assurance Project Plan for the Fish and Decapod Crustacean Tissue Collection for Chemical Analysis and Fish Community Survey* (Windward 2009a), hereafter referred to as the Fish/Decapod QAPP, and per the January 20, 2010, fish/decapod tissue sampling meeting between CPG and USEPA.

The following presents the revised sample analysis plan for all fish, with the exception of American eel and white perch, based on the tissue collected during the late summer/early fall 2009 sampling effort. A revised sample analysis plan for American eel and white perch will be provided in a subsequent memo.

The following revisions were made to the November 6, 2009, fish analysis proposal (Windward 2009b) based on the discussions conducted during the January 20, 2010, meeting and USEPA March 25, 2010, comments (USEPA 2010) to this memorandum dated February 12, 2010:

- ◆ Analysis samples These species will be analyzed and evaluated in the risk assessments:
 - White catfish/channel catfish Proposed samples for white catfish and channel catfish were changed from composite samples of multiple fish to individual samples of fish that were greater than 450 g.¹ One additional white catfish weighing less than 450 g will also be analyzed per USEPA (USEPA 2010). Fillet and carcass samples will be analyzed. These catfish data may be combined for evaluation in the risk assessments, provided their life histories are sufficiently similar, as suggested by a preliminary literature search, and following consultation with USEPA. Both are omnivorous benthic feeders with a varied diet that can include small fish, crustaceans, and other invertebrates, prefer habitats of slow moving water and mud-bottomed areas and have long lifespans (Ashley et al. 2004; Maryland DNR 2007; Werner 2004).
 - Carp The number of carp samples for use in the risk assessments was reduced from 26 to 12. Carp samples for the HHRA (as fillet samples) and for the ERA (as whole-body samples) from separate fish will be analyzed (i.e., no carcass samples will be analyzed).
 - **Brown bullhead** No individual brown bullhead were greater than 450 g; therefore, no fillet samples for brown bullhead samples have been proposed. Instead, six individual brown bullhead samples are proposed for whole body analysis. These data will be evaluated in the ERA.
 - White sucker Five samples of each fillet and five carcass tissue have been added based on five individual white suckers per USEPA, although white sucker were not identified as a target or alternative receptor in the Fish/Decapod QAPP (Windward 2009a).
 - Bass and pike Three largemouth bass samples of each fillet and carcass tissue, three smallmouth bass samples of each fillet and carcass tissue, and one northern pike sample of each fillet and carcass tissue have been proposed.
- ◆ QC samples Samples that are targeted for quality control (QC) analysis have been identified in an appendix summary table (Table A1).

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¹ An individual fish weight greater than 450 g was selected based on the assumption that fish fillet mass makes up one-third (33.3%) of whole-body fish mass. A whole-body sample mass of 450 g is therefore needed to achieve an estimated fillet mass that meets minimum mass requirements (i.e., 150 g). Verification of this assumption will be made at the laboratory once homogenization of samples begins.

This analysis plan will provide a limited amount of data (i.e., small sample sizes) for the following fish species: brown bullhead, smallmouth bass, largemouth bass, northern pike, and white sucker. Details on how these data will be used in the risk assessments are still under discussion between USEPA and CPG. During the January 20, 2010, meeting, USEPA requested that if additional bass are caught during the spring or summer 2010 collection efforts, the CPG consider keeping these fish for analysis to expand the limited bass dataset, especially because they are target species per the Fish/Decapod QAPP (Windward 2009a). The CPG agrees to consider this request during 2010 fish tissue sampling.

1 OVERALL FISH SAMPLE ANALYSIS PLAN

The Fish/Decapod QAPP (Windward 2009a) defined the estuarine zone as the part of the LPRSA between River Mile (RM) 0 and RM 10 and the freshwater zone as the part of the LPRSA area above RM 10 (from RM 10 to RM 17.4). Five 2-mile reaches were defined in the estuarine zone; two 2-mile reaches and one 3.4-mile reach were defined in the freshwater zone (Table 1).

Table 1. Summary of reach designations per zone

Zone	Reach	RM	
	1	RM 0 – RM 2	
	2	RM 2 – RM 4	
Estuarine zone (RM 0 to RM 10)	3	RM 4 – RM 6	
(2	4	RM 6 – RM 8	
	5	RM 8 – RM 10	
	6	RM 10 – RM 12	
Freshwater zone (RM 10 to RM 17.4)	7	RM 12 – RM 14	
(8	RM 14 – RM 17.4	

RM - river mile

Fish target species were identified in the Fish/Decapod QAPP (Windward 2009a) and are presented in Table 2. In addition, the following alternative fish species were also identified in the Fish/Decapod QAPP: summer flounder, white catfish, Atlantic tomcod, northern pike, and carp. All eligible target and alternative species that were caught during sampling were retained for possible chemical analysis.² The following fish were also retained during sampling: Atlantic silverside, gizzard shad, white sucker, smallmouth bass, striped bass, and rock bass.

² Per the Fish/Decapod QAPP (Windward 2009a), fish that underwent a health assessment analysis were not retained for chemical analysis.



Table 2.

		Actual Species Caught ar Recommended for Analys	
Estuarine Zone ^a	Freshwater Zone ^b	Estuarine Zone ^a	Freshwate
	mmendations fo Target (and Alterna in the Fish/	mmendations for chemical analysis Target (and Alternative) Species Identified in the Fish/Decapod QAPP	in the Fish/Decapod QAPP Recommende

Target and alternative fish species by feeding guild and

		tive) Species Identified Decapod QAPP	Actual Species Caught and Recommended for Analysis		
Feeding Guild	Estuarine Zone ^a	Freshwater Zone ^b	Estuarine Zone ^a	Freshwater Zone ^b	
Benthic omnivore	mummichog	darter or killifish species	none (data gap) ^c	none (data gap) ^c	
Invertivore/omnivore	white perch (Atlantic tomcod)	channel catfish/ brown bullhead (white catfish, carp)	white perch, brown bullhead, channel catfish, white catfish	white perch, brown bullhead, channel catfish, white catfish	
Piscivore	American eel (summer flounder)	largemouth bass (northern pike)	American eel, largemouth bass, smallmouth bass, and northern pike	American eel, largemouth bass, smallmouth bass, and northern pike	

The estuarine zone is located between RM 0 and RM 10.

In response to USEPA's comments (Vaughn 2010) on the CPG's November 6, 2009, proposed fish analysis plan (Windward 2009b), a number of fish (i.e., channel catfish, white catfish, white sucker, brown bullhead, and largemouth bass, and northern pike) that are greater than 450 g are proposed for individual analysis.³ There are a few exceptions in which fish less than 450 g are proposed for analysis as individual samples:

- One white sucker sample (Ind023) has a whole-body mass of 434 g (and an estimated fillet mass of 145 g.
- ◆ Two largemouth bass samples (Ind009 and Ind002) each have a whole-body mass of 440 and 422 g, respectively (and estimated fillet mass of 147 and 141 g, respectively).
- One white catfish samples (Ind006) each has a whole-body mass of 422 g (and estimated fillet mass of 141 g).
- All six brown bullhead samples are less than 450 g; however, no fillet samples are proposed for this species. These samples will be analyzed as whole body samples, and all six fish are greater than 150 g and expected to have sufficient mass for whole body analysis.

If the actual mass of any sample measured in the laboratory during the composite preparation is less than the target mass of 150 g, a discussion on analyte priority between USEPA and CPG will take place prior to any analysis of that sample.

Composite samples are proposed for other fish species (i.e., largemouth bass and smallmouth bass) because individual body mass is insufficient for individual samples.

The freshwater zone is located between RM 10 and RM 17.4.

These data are proposed for collection in spring 2010 as mummichog were not abundant in the LPRSA during the late summer/early fall 2009 sampling effort.

³ Fish fillet mass and carcass mass were estimated assuming that the fillet makes up one-third (33.3%) of the total body weight.

The compositing criteria were outlined in the Fish/Decapod QAPP (Windward 2009a). The following is a summary of compositing criteria in order of priority:

- 1. Composite by species.
- 2. Require a target tissue mass of 150 g (pre-homogenization) for analysis of all analyte groups. Fish fillet mass and carcass mass were estimated assuming that the fillet makes up one-third (33.3%) of the total body weight and the carcass makes up the remaining mass.
- 3. Include a minimum of three specimens per composite sample.
- 4. Composite specimens of similar size based on length.⁴
- 5. Consider the following in concert:
 - Composite by location when possible
 - Composite specimens that meet minimum target length

All compositing criteria were considered on a species-specific basis. Exceptions to the criteria include the following:

- ◆ For one largemouth bass composite sample (Comp01) and two smallmouth bass composite samples (Comp01 and Comp02), a sample size of only two fish is proposed to maximize the number of possible samples.
- ◆ One smallmouth bass fillet composite sample has an estimated mass that is slightly less than the targeted 150 g (estimated fillet mass is 136 g). Because estimated masses may be different than actual masses measured in the laboratory during the composite preparation, the analytical list of any sample that is found to have actual mass less than the target mass of 150 g will be discussed between USEPA and CPG prior to any analysis of that sample.
- ◆ Some of the proposed composites cannot be composited by location. One largemouth bass (Comp01) and two smallmouth bass samples (Comp02 and Comp03) will have to be composited across multiple sampling locations within the same reach.

The proposed sample analysis plan is presented in Table 3. The number of samples proposed in the Fish/Decapod QAPP (Windward 2009a) is presented in Column 4, Target No. of Samples, and the number of samples proposed based on the actual catch is presented in Column 5, Proposed No. of Samples.

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⁴ In a call on September 9, 2009, USEPA and CPG agreed that fish and decapods are of similar size when the lengths of all specimens in a composite are within 25% of the mean length for that composite.

Table 3. Summary of proposed tissue samples

Feeding Guild	Target or Alternative Species	Type of Sample	Target No. of Samples	Proposed No. of Samples	Proposed Sample Type
Benthic	mummichog	whole body	39	0 ^a	none (data gap)
omnivore – forage fish	darter or killifish species	whole body	43	0 ^a	none (data gap)
	white perch	skin-on fillet	24	TBD⁵	TBD⁵
	white perch	carcass	24	TBD⁵	TBD⁵
		skinless fillet	26	11	individual ^c
	channel catfish/brown bullhead	carcass with skin	26	11	individual ^c
		whole body	0	6	individual ^c
Invertivore/ Omnivore	white catfish ^d	skinless fillet	0	19	individual
	writte Catilisti	carcass with skin	0	19	individual
	common carp ^d	skin-on fillet	0	12	individual
	common carp	whole body	0	12	individual
	white sucker ^e	skin-on fillet	0	5	individual
	writte sucker	carcass	0	5	individual
	American eel	skinless fillet	24	TBD⁵	TBD⁵
	American eei	carcass with skin	24	TBD⁵	TBD⁵
	largemouth bass	skin-on fillet	26	3	composite (n = 1); individual (n = 2)
Piscivore	largemouth bass	carcass	26	3	composite (n = 1); individual (n = 2)
	smallmouth bass ^a northern pike	skin-on fillet	0	3	composite
		carcass	0	3	composite
		skin-on fillet	0	1	individual
		carcass	0	1	individual

Limited numbers of these species were collected in the late summer/early fall 2009 sampling effort; therefore, these species will be targeted for re-collection in spring 2010. Fish collected during the late summer/early fall 2009 effort have been retained (frozen) and may be analyzed at a later date pending the 2010 catch results.

TBD – to be determined



The sample analysis plan for white perch and American eel will be presented in a subsequent memorandum.

Channel catfish will be analyzed as fillet and carcass samples, and brown bullhead will be analyzed as whole body samples.

White catfish and carp were identified as an alternative species for collection in the Fish/Decapod QAPP (Windward 2009a).

White sucker was not identified as a target or alternative species in the Fish/Decapod QAPP (Windward 2009a); however, this species will be analyzed per USEPA (Vaughn 2010).

Additional details on the proposed number of composite or individual specimen samples (by feeding guild) are presented in Sections 2 through 4.

Figures 1 through 4 present the locations of the fish specimens proposed for analysis. Table A1 in Attachment A summarizes the proposed fish samples for analysis (and tissue type) and sampling locations based on assigned sample IDs. Attachment A also presents the details, including sample IDs, of all individual fish identified for chemistry analysis (Tables A2 through A4) and the specimen sampling locations (Table A5).

As specified in the Fish/Decapod QAPP (Windward 2009a), in order to conduct matrix-specific quality control (QC), 1 in every 20 samples per matrix type requires a mass of 450 g (this includes both mass for the matrix QC and the analytical sample). Matrix type is defined as both the tissue type and feeding guild (e.g., fillet samples for piscivorous fish). The proposed sample analysis plan is expected to provide sufficient mass to meet the matrix QC requirement based on the estimated mass per sample. In addition to QC samples, additional tissue mass is needed to satisfy USEPA split sample requests. Table A1 (in Appendix A) provides the estimated sample mass for all composites and tissue types and the samples that will be selected to meet QC requirements, which can be used by USEPA to determine possible candidate samples for splits under this proposed sampling design. The selection of USEPA split samples should follow the selection of QC samples to ensure that sufficient mass is available for matrix QC as specified in the Fish/Decapod QAPP (Windward 2009a).

All specimens collected and retained during the late summer/early fall 2009 sampling effort that are not proposed for analysis at this time will be retained for possible future analysis up to the specified holding time for tissue samples (1 year) per the USEPA-approved Fish/Decapod QAPP (Windward 2009a). The CPG and USEPA are discussing the fate of specimens not analyzed prior to the end of the 1-year holding time and will develop a plan for the management of these specimens prior to the expiration of the 1-year deadline.

2 BENTHIC OMNIVORE FORAGE FISH: MUMMICHOG AND DARTER/KILLIFISH

Target Species/Tissue Type

- ◆ Estuarine zone: mummichog (whole body)
- Freshwater zone: darter or killifish (whole body)

Catch Summary

Very few mummichog and darter or killifish were caught during the late summer/early fall 2009 field effort. Only one location in Reach 2, at approximately RM 2.4, provided sufficient mummichog tissue for a composite sample (31 individuals totaling 150 g of tissue).



Analysis Options

Because one sample is not representative of the relationship between sediment and tissue throughout the river, USEPA and CPG jointly decided to forego the analysis of the 2009 mummichog specimens collected and to re-attempt mummichog collection during the planned spring 2010 event. All mummichog collected in 2009 will be retained for possible future analysis.

3 INVERTIVORE/OMNIVORE: BULLHEAD/CATFISH

Target Species/Tissue Type

- ◆ Freshwater zone: brown bullhead and channel catfish⁵ (skinless fillet and carcass with skin)
- ◆ Target length was 8 in. (203 mm) for brown bullhead and 12 in. (305 mm) for channel catfish (legal limit for channel catfish). Inasmuch as there is no legal minimum catch size for brown bullhead, the target size of 8 in. (203 mm) is based on an assumed meaningful target size for human consumption.

Catch Summary

- While brown bullhead and channel catfish were the targeted invertivore/omnivore species in the freshwater zone, some individuals of both species were collected in the estuarine zone:
 - Brown bullhead were caught in Reaches 3, 4, 6, and 7. All brown bullhead meet the target length of 8 in. (203 mm).
 - Channel catfish were caught in Reaches 5, 6, 7, and 8. Twelve of the fourteen channel catfish meet the target length of 12 in. (305 mm), eleven of which are of sufficient mass (> 450 g) to be analyzed as individual samples.
- ◆ White catfish (alternative species) were also caught in both the freshwater and estuarine zone (in Reaches 2 through 8). Eighteen of the white catfish are of sufficient mass (> 450 g) to be analyzed as individual samples.

⁵ The alternative freshwater invertivore/ominvore species were common carp and white catfish. White sucker were not identified as a target or alternative receptor in the Fish/Decapod QAPP (Windward 2009a); however, analysis of this species was requested per USEPA (Vaughn 2010).



- ◆ Common carp (alternative species) were caught in Reaches 3 through 8, all of which are of sufficient mass (> 450 g) to be individual samples.
- ◆ White sucker were caught in Reaches 4, 5, and 8. Seventeen of the white sucker are of sufficient mass (> 450 g) to be analyzed as individual samples.

Analysis Options

- ◆ The analysis of 24 individual specimens of common carp that are evenly distributed throughout the reaches is proposed; 2 fillet and 2 whole-body samples per reach are proposed, for a total of 12 fillet and 12 whole-body samples. Carp samples for the HHRA (as fillet samples) and for the ERA (as whole-body samples) from separate fish will be analyzed (i.e., no carcass samples will be analyzed).
- ◆ Eighteen individual channel catfish and eleven white catfish were selected for sample analysis because these fish were all greater than 450 g. One additional white catfish weighing less than 450 g will also be analyzed per USEPA (USEPA 2010). Fillet and carcass samples will be made from individual fish. These catfish data may be combined for evaluation in the risk assessments, provided their life histories are sufficiently similar, as suggested by a preliminary literature search, and following consultation with USEPA. Both are omnivorous benthic feeders with a varied diet that can include small fish, crustaceans, and other invertebrates, prefer habitats of slow moving water and mud-bottomed areas and have long lifespans (Ashley et al. 2004; Maryland DNR 2007; Werner 2004).
- No individual brown bullhead were greater than 450 g; therefore, no fillet brown bullhead samples have been proposed. Instead, six individual brown bullhead samples are proposed for whole body analysis. These data will be evaluated in the ERA.
- ◆ White sucker were not identified as a target or alternative receptor in the Fish/Decapod QAPP (Windward 2009a); however, five fillet and five carcass samples have been added based on five individual white suckers per USEPA (Vaughn 2010).

The bullhead/catfish, carp, and white sucker analysis options are summarized in Table 4.



 Table 4.
 Summary of analysis options for invertivorous/omnivorous fish

Sample Type			No. of Samples	
by Species	Reach	Fillet	Carcass	Whole Body
Channel Catfish				
	5	1	1	-
ا مان نام دا	6	2	2	-
Individual	7	2	2	-
	8	6	6	-
Total	na	11	11	0
White Catfish ^a				
	2	1	1	-
	3	4	4	-
	4	1	1	-
Individual	5	2 ^b	2	-
	6	5	5	-
	7	2	2	-
	8	4	4	-
Total	na	19	19	0
Brown Bullhead				
	3	-	-	1
	4	-	-	1
landi dali al	6	-	-	1
Individual	6	-	-	1
	6	-	-	1
	7	-	-	1
Total	na	0	0	6
Carp				
	3	2	-	2
	4	2	-	2
landi dali al	5	2	-	2
Individual	6	2	-	2
	7	2	-	2
	8	2	-	2
Total	na	12	0	12
White Sucker				
	4	1 ^c	1	-
Individual	5	2	2	-
	8	2	2	-
Total	na	5	5	0



- The target size for white catfish was assumed to be the same as that for channel catfish (i.e., 12 in. [305 mm]); however, the target size was reduced to 9 in. (228 mm).
- b Estimated fillet sample mass of one sample (141 g) is less than minimum mass requirement (150 g).
- ^c Estimated fillet sample mass (145 g) is less than minimum mass requirement (150 g). na not applicable

4 OMNIVORE/PISCIVORE: LARGEMOUTH BASS

Target Species/Tissue Type

- Freshwater zone: largemouth bass⁶ (skin-on fillet and carcass)
- ◆ Target length: 12 in. (305 mm) (also minimum legal catch size)

Catch Summary

- Largemouth bass were the targeted omnivore/piscivore species in the freshwater zone; however; other bass species and northern pike (the alternative species for this feeding guild and zone) were also collected in both the estuarine and freshwater zones:
 - A total of 18 largemouth bass were caught in three of the reaches (4, 5, and 8). However, all but two fish were less than the target length of 12 in. (305 mm), and all but four were less than 8 in. (203 mm). The estimated fillet mass in individual largemouth bass less than 8 in. (203 mm) is less than 10 g.
 - A total of 9 smallmouth bass and 12 striped bass were caught in Reaches 4, 5, and 8, and 1 striped bass was caught in Reach 1. Eight rock bass were collected from Reach 8, and one rock bass was collected from Reach 6. Two northern pike were collected (one each in Reaches 5 and 6).

Analysis Options

- Only a limited number of samples is possible for either bass species or northern pike due to the insufficient number and limited mass of specimens collected. Composite samples are proposed for largemouth and smallmouth bass to provide data (albeit limited) for resident fish in this feeding guild. Bass also represent a species that are caught and consumed by people.
- ◆ Largemouth bass, smallmouth bass, and northern pike samples are proposed following USEPA's recommendation (Vaughn 2010). Two individual samples (from Reaches 5 and 8) and one composite sample (from Reach 5) are proposed for largemouth bass. Three composite samples (from Reaches 4, 5, and 8) are proposed for smallmouth bass. One individual sample (from Reach 6) is proposed for northern pike.
- ◆ Target sizes for largemouth bass and smallmouth bass were reduced from 12 in. (305 mm) to 8 in. (203 mm).

Wind Ward

⁶ The alternative freshwater omnivore/piscivore species was northern pike.

A summary of the bass and northern pike analysis options are presented in Table 5.

Table 5. Summary of bass and pike analysis options

Sample Type by Species	Reach(es)	No. of Samples ^a	No. of Fish per Sample
Largemouth Bas	s		
Composite	5	1 ^b	2
la dividual	5	1 ^{b, c}	1
Individual	8	1 ^{b, c}	1
Total	na	3	4
Smallmouth Bas	S		
	4	1 ^d	2
Composite	5	1 ^d	2
	8	1 ^{c, d}	3
Total	na	2	7
Northern Pike			
Individual	6	1	1
Total	na	1	1

^a Two tissue types will be analyzed: fillet and carcass tissue.

na – not applicable

5 REFERENCES

USEPA. 2010. Comments: Revised sample analysis plan for catfish/bullhead, carp, bass, white sucker, and northern pike tissue for the Lower Passaic River Restoration Project dated February 12, 2010. Received March 25, 2010 via e-mail. US Environmental Protection Agency Region 2, New York, NY.

USEPA, USDOD, USDOE. 2005. Evaluating, assessing, and documenting environmental data collection/use and technology programs. Part 1: UFP-QAPP manual. Version 1. EPA-505-B-04-900A. Intergovernmental Data Quality Task Force, Uniform Federal Policy for Quality Assurance Project Plans. US Environmental Protection Agency, US Department of Defense, and US Department of Energy, Washington, DC.

Vaughn S. 2010. Personal communication (e-mail to R. Law, de maximis, regarding tissue sampling and compositing meeting). US Environmental Protection Agency, January 8, 2010.



The target size of largemouth bass was reduced from 12 in. (305 mm) to 8 in. (203 mm) in order to create two composite samples.

^c Estimated fillet sample mass (ranging from 136 to 147 g) is less than minimum mass requirement (150 g).

New Jersey legal catch size for smallmouth bass is 12 in. (305 mm); however, the target size was reduced to 8 in. (203 mm) in order to maximize the number of samples possible.

- Windward. 2009a. Lower Passaic River Restoration Project. Lower Passaic River Study Area RI/FS. Quality Assurance Project Plan: Fish and decapod crustacean tissue collection for chemical analysis and fish community survey. Final. Prepared for Cooperating Parties Group, Newark, New Jersey. Windward Environmental LLC, Seattle, WA.
- Windward. 2009b. Memorandum dated November 6, 2009, to Robert Law, de maximis, inc.: Proposed sample analysis plan for fish/decapod tissue for the Lower Passaic River Restoration Project. Windward Environmental LLC, Seattle, WA.



Table A1. Summary	of proposed	samples for all fish spe	cies (excluding white	perch and American eel)		Estimated Mass (g)				
				Sample ID (tissue type						
Reach	Reach	RM	Location (s)	1)	Sample ID (tissue type 2)	Fillet	Carcass	WB mass (g)	n	
Carp	3	RM 4 - RM 6	LPR3M	LPR3-CCFT-Ind004		1200			1	
Carp	3	RM 4 - RM 6	LPR3M		LPR3-CCWB-Ind005			2200	1	
Carp	3	RM 4 - RM 6	LPR3N	LPR3-CCFT-Ind001		1667			1	
Carp	3	RM 4 - RM 6	LPR3N		LPR3-CCWB-Ind002			2590	1	
Carp	4	RM 6 - RM 8	LPR4O	LPR4-CCFT-Ind155		2377			1	
Carp	4	RM 6 - RM 8	LPR4L	LPR4-CCFT-Ind156		1283			1	
Carp	4	RM 6 - RM 8	LPR4S		LPR4-CCWB-Ind175			3748	1	
Carp	4	RM 6 - RM 8	LPR4T		LPR4-CCWB-Ind186			3498	1	
Carp	5	RM 8 - RM 10	LPR5G		LPR5-CCWB-Ind011			2500	1	
Carp	5	RM 8 - RM 10	LPR5R		LPR5-CCWB-Ind160			3898	1	
Carp	5	RM 10 - RM 12	LPR5S	LPR5-CCFT-Ind181		2225			1	
Carp	5	RM 10 - RM 12	LPR5T	LPR5-CCFT-Ind184		1785			1	
Carp	6	RM 10 - RM 12	LPR6L	LPR6-CCFT-Ind032		1500			1	
Carp	6	RM 10 - RM 12	LPR6L	LPR6-CCFT-Ind104		1667			1	
Carp	6	RM 10 - RM 12	LPR6M		LPR6-CCWB-Ind028			3050	1	
Carp	6	RM 10 - RM 12	LPR6N		LPR6-CCWB-Ind021			2963	1	
Carp	7	RM 12 - RM 14	LPR7L		LPR7-CCWB-Ind042			3100	1	
Carp	7	RM 12 - RM 14	LPR7L	LPR7-CCFT-Ind092		1056			1	
Carp	7	RM 12 - RM 14	LPR7M	LPR7-CCFT-Ind068		1054			1	
Carp	7	RM 12 - RM 14	LPR7M		LPR7-CCWB-Ind069			3056	1	
Carp	8	RM 14 - RM 17.4	LPR8R	LPR8-CCFT-Ind131		1383			1	
Carp	8	RM 14 - RM 17.4	LPR8S	LPR8-CCFT-Ind121		1553			1	
Carp	8	RM 14 - RM 17.4	LPR8U		LPR8-CCWB-Ind139			3140	1	
Carp	8	RM 14 - RM 17.4	LPR8X		LPR8-CCWB-Ind147			3064	1	
Channel catfish	5	RM 8 - RM 10	LPR5F	LPR5-IPFT-Ind001	LPR5-IPCT-Ind001	203	407		1	
Channel catfish	6	RM 10 - RM 12	LPR6M	LPR6-IPFT-Ind004	LPR6-IPCT-Ind004	236	472		1	
Channel catfish	6	RM 10 - RM 12	LPR6Q	LPR6-IPFT-Ind003	LPR6-IPCT-Ind003	270	540		1	
Channel catfish	7	RM 12 - RM 14	LPR7L	LPR7-IPFT-Ind005	LPR7-IPCT-Ind005	163	325		1	
Channel catfish	7	RM 12 - RM 14	LPR7Q	LPR7-IPFT-Ind006	LPR7-IPCT-Ind006	300	600		1	
Channel catfish	8	RM 14 - RM 17.4	LPR8R	LPR8-IPFT-Ind008	LPR8-IPCT-Ind008	170	340		1	
Channel catfish	8	RM 14 - RM 17.4	LPR8R	LPR8-IPFT-Ind009	LPR8-IPCT-Ind009	497	993		1	
Channel catfish	8	RM 14 - RM 17.4	LPR8S	LPR8-IPFT-Ind010	LPR8-IPCT-Ind010	308	617		1	
Channel catfish	8	RM 14 - RM 17.4	LPR8S	LPR8-IPFT-Ind011	LPR8-IPCT-Ind011	338	677		1	
Channel catfish	8	RM 14 - RM 17.4	LPR8S	LPR8-IPFT-Ind012	LPR8-IPCT-Ind012	302	603	1	1	
Channel catfish	8	RM 14 - RM 17.4	LPR8S	LPR8-IPFT-Ind013	LPR8-IPCT-Ind013	325	650	1	1	
White catfish	2	RM 2 - RM 4	LPR2K	LPR2-ACFT-Ind018	LPR2-ACCT-Ind018	259	519		1	
White catfish	3	RM 4 - RM 6	LPR3L	LPR3-ACFT-Ind001	LPR3-ACCT-Ind001	209	419	1	1	
White catfish	3	RM 4 - RM 6	LPR3L	LPR3-ACFT-Ind002	LPR3-ACCT-Ind002	417	833	1	1	
White catfish	3	RM 4 - RM 6	LPR3P	LPR3-ACFT-Ind005	LPR3-ACCT-Ind005	417	833		1	
White catfish	3	RM 4 - RM 6	LPR3Q	LPR3-ACFT-Ind003	LPR3-ACCT-Ind003	170	340	†	1	

Table A1. Summary o	of proposed	samples for all fish sp	ecies (excluding white pe	erch and American eel)		Estimate	ed Mass (g)	1	
				Sample ID (tissue type					
Reach	Reach	RM	Location (s)	1)	Sample ID (tissue type 2)	Fillet	Carcass	WB mass (g)	n
White catfish	4	RM 6 - RM 8	LPR4L	LPR4-ACFT-Ind023	LPR4-ACCT-Ind023	431	863		1
White catfish	5	RM 8 - RM 10	LPR5H	LPR5-ACFT-Ind006	LPR5-ACCT-Ind006	141	281		1
White catfish	5	RM 8 - RM 10	LPR5S	LPR5-ACFT-Ind024	LPR5-ACCT-Ind024	565	1130		1
White catfish	6	RM 10 - RM 12	LPR6P	LPR6-ACFT-Ind016	LPR6-ACCT-Ind016	159	317		1
White catfish	6	RM 10 - RM 12	LPR6R	LPR6-ACFT-Ind008	LPR6-ACCT-Ind008	227	453		1
White catfish	6	RM 10 - RM 12	LPR6R	LPR6-ACFT-Ind009	LPR6-ACCT-Ind009	213	425		1
White catfish	6	RM 10 - RM 12	LPR6S	LPR6-ACFT-Ind010	LPR6-ACCT-Ind010	210	420		1
White catfish	6	RM 10 - RM 12	LPR6S	LPR6-ACFT-Ind013	LPR6-ACCT-Ind013	280	560		1
White catfish	7	RM 12 - RM 14	LPR7N	LPR7-ACFT-Ind017	LPR7-ACCT-Ind017	252	504		1
White catfish	7	RM 12 - RM 14	LPR7P	LPR7-ACFT-Ind014	LPR7-ACCT-Ind014	328	656		1
White catfish	8	RM 14 - RM 17.4	LPR8Q	LPR8-ACFT-Ind019	LPR8-ACCT-Ind019	300	600		1
White catfish	8	RM 14 - RM 17.4	LPR8R	LPR8-ACFT-Ind020	LPR8-ACCT-Ind020	501	1003		1
White catfish	8	RM 14 - RM 17.4	LPR8R	LPR8-ACFT-Ind021	LPR8-ACCT-Ind021	455	911		1
White catfish	8	RM 14 - RM 17.4	LPR8S	LPR8-ACFT-Ind022	LPR8-ACCT-Ind022	197	393		1
Brown bullhead	3	RM 4 - RM 6	LPR3F	LPR3-ANWB-Ind001				300	1
Brown bullhead	4	RM 6 - RM 8	LPR4O	LPR4-ANWB-Ind007				414	1
Brown bullhead	6	RM 10 - RM 12	LPR6P	LPR6-ANWB-Ind004				330	1
Brown bullhead	6	RM 10 - RM 12	LPR6P	LPR6-ANWB-Ind005				240	1
Brown bullhead	6	RM 10 - RM 12	LPR6S	LPR6-ANWB-Ind003				188	1
Brown bullhead	7	RM 12 - RM 14	LPR7P	LPR7-ANWB-Ind006				200	1
White sucker	4	RM 6 - RM 8	LPR4T	LPR4-WSFT-Ind023	LPR4-WSCT-Ind023	145	289		1
White sucker	5	RM 8 - RM 10	LPR5I	LPR5-WSFT-Ind019	LPR5-WSCT-Ind019	321	643		1
White sucker	5	RM 8 - RM 10	LPR5T	LPR5-WSFT-Ind020	LPR5-WSCT-Ind020	233	467		1
White sucker	8	RM 14 - RM 17.4	LPR8V	LPR8-WSFT-Ind009	LPR8-WSCT-Ind009	189	377		1
White sucker	8	RM 14 - RM 17.4	LPR8W	LPR8-WSFT-Ind013	LPR8-WSCT-Ind013	263	525		1
Largemouth bass	5	RM 8 - RM 10	LPR5Q, LPR5R	LPR5-MSFT-Comp01	LPR5-MSCT-Comp01	164	328		2
Largemouth bass	5	RM 8 - RM 10	LPR5R	LPR5-MSFT-Ind009	LPR5-MSCT-Ind009	147	293		1
Largemouth bass	8	RM 14 - RM 17.4	LPR8X	LPR8-MSFT-Ind002	LPR8-MSCT-Ind002	141	281		1
Smallmouth bass	4	RM 6 - RM 8	LPR4S	LPR4-MDFT-Comp01	LPR4-MDCT-Comp01	155	311		2
Smallmouth bass	5	RM 8 - RM 10	LPR5Q, LPR5R	LPR5-MDFT-Comp02	LPR5-MDCT-Comp02	171	342		2
Smallmouth bass	8	RM 14 - RM 17.4	LPR8U, LPR8V, LPR8Z	LPR8-MDFT-Comp03	LPR8-MDCT-Comp03	136	271		3
Northern pike	6	RM 10 - RM 12	LPR6L	LPR6-ELFT-Ind001	LPR6-ELCT-Ind001	933	1867		1

Notes:

Bold italic samples are samples with estimated mass of < 150 g; reduced analyte list may be necessary Shaded cells indicate the samples targetted for QC analysis

						Length			Sample ID (tissue	Sample ID (tissue	
each	RM	Trap ID	Specimen ID	Weight (g)	33% of Wgt	(mm)	Gender	Specimen Comments	type 1)	type 2)	Sample Type
PR3	4-6	LPR3M-A	LPR3M-CC004	3600	1200.0	635	indeterminant		LPR3-CCFT-Ind004		individual
PR3	4-6	LPR3M-A	LPR3M-CC005	2200	733.3	550	indeterminant			LPR3-CCWB-Ind005	individual
.PR3	4-6	LPR3N-A	LPR3N-CC001	5000	1666.7	610	indeterminant	Length >610, weight >5000	LPR3-CCFT-Ind001		individual
.PR3	4-6	LPR3N-A	LPR3N-CC002	2590	863.3	575	indeterminant			LPR3-CCWB-Ind002	individual
.PR4	6-8	LPR4L-A	LPR4L-CC152	2600	866.7	546	indeterminant				
.PR4	6-8	LPR4P-A	LPR4P-CC009	1900	633.3	485	indeterminant				
.PR4	6-8	LPR4P-A	LPR4P-CC017	2900	966.7	560	indeterminant				
.PR4	6-8	LPR4P-A	LPR4P-CC154	3950	1316.7	611	indeterminant				
.PR4	6-8	LPR4O-A	LPR4O-CC155	7130	2376.7	779	indeterminant		LPR4-CCFT-Ind155		individual
.PR4	6-8	LPR4L-A	LPR4L-CC156	3850	1283.3	606	indeterminant		LPR4-CCFT-Ind156		individual
PR4	6-8	LPR4R-A	LPR4R-CC173	2074	691.3	525	indeterminant				
PR4	6-8	LPR4R-A	LPR4R-CC174	2398	799.3	535	indeterminant				
.PR4	6-8	LPR4R-A	LPR4R-CC187	2632	877.3	567	indeterminant				
PR4	6-8	LPR4S-A	LPR4S-CC175	3748	1249.3	607	indeterminant			LPR4-CCWB-Ind175	individual
PR4	6-8	LPR4S-A	LPR4S-CC176	2498	832.7	540	indeterminant				
.PR4	6-8	LPR4S-A	LPR4S-CC177	3350	1116.7	630	indeterminant				
.PR4	6-8	LPR4S-A	LPR4S-CC188	2102	700.7	532	indeterminant				
.PR4	6-8	LPR4T-A	LPR4T-CC178	2182	727.3	534	indeterminant				
.PR4	6-8	LPR4T-A	LPR4T-CC186	3498	1166.0	573	indeterminant			LPR4-CCWB-Ind186	individual
PR5	8-10	LPR5E-A	LPR5E-CC006	2050	683.3	516	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC007	2550	850.0	574	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC008	3950	1316.7	592	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC010	2500	833.3	646	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC012	4200	1400.0	650	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC013	3450	1150.0	600	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC014	4550	1516.7	645	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC015	2950	983.3	565	indeterminant				
PR5	8-10	LPR5E-A	LPR5E-CC018	2250	750.0	520	indeterminant				
PR5	8-10	LPR5G-A	LPR5G-CC011	2500	833.3	524	indeterminant			LPR5-CCWB-Ind011	individual
PR5	8-10	LPR5G-A	LPR5G-CC016	1400	466.7	470	indeterminant	Missing left eye			
PR5	8-10	LPR5I-A	LPR5I-CC153	2100	700.0	542	indeterminant				
PR5	8-10	LPR5Q-A	LPR5Q-CC179	2708	902.7	556	indeterminant				
PR5	8-10	LPR5R-A	LPR5R-CC157	3052	1017.3	544	indeterminant				
PR5	8-10	LPR5R-A	LPR5R-CC158	3960	1320.0	604	indeterminant				
PR5	8-10	LPR5R-A	LPR5R-CC159	2700	900.0	564	indeterminant				
PR5	8-10	LPR5R-A	LPR5R-CC160	3898	1299.3	608	indeterminant			LPR5-CCWB-Ind160	individual
PR5	8-10	LPR5R-A	LPR5R-CC161	3056	1018.7	577	indeterminant				
PR5	8-10	LPR5R-A	LPR5R-CC162	3296	1098.7	596	indeterminant				
PR5	8-10	LPR5R-A	LPR5R-CC163	2878	959.3	560	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC165	4590	1530.0	616	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC166	5090	1696.7	666	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC167	4065	1355.0	627	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC168	3670	1223.3	636	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC169	6040	2013.3	718	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC170	5555	1851.7	666	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC180	2506	835.3	533	indeterminant				
PR5	8-10	LPR5S-A	LPR5S-CC181	6675	2225.0	727	indeterminant		LPR5-CCFT-Ind181		individual

						Length			Sample ID (tissue	Sample ID (tissue	
Reach	RM	Trap ID	Specimen ID	Weight (g)	33% of Wgt	(mm)	Gender	Specimen Comments	type 1)	type 2)	Sample Type
LPR5	8-10	LPR5S-A	LPR5S-CC182	2716	905.3	530	indeterminant				
LPR5	8-10	LPR5T-A	LPR5T-CC172	3358	1119.3	577	indeterminant				
LPR5	8-10	LPR5T-A	LPR5T-CC183	3772	1257.3	608	indeterminant				
LPR5	8-10	LPR5T-A	LPR5T-CC184	5355	1785.0	635	indeterminant		LPR5-CCFT-Ind184		individual
LPR5	8-10	LPR5T-A	LPR5T-CC185	3684	1228.0	645	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC031	1910	636.7	509	indeterminant	Missing left eye			
LPR6	10-12	LPR6L-A	LPR6L-CC032	4500	1500.0	625	indeterminant	, , , , , , , , , , , , , , , , , , ,	LPR6-CCFT-Ind032		individual
LPR6	10-12	LPR6L-A	LPR6L-CC033	2220	740.0	532	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC050	2132	710.7	530	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC051	2624	874.7	575	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC052	1652	550.7	500	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC053	2096	698.7	555	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC054	2242	747.3	535	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC066	1884	628.0	495	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC067	3526	1175.3	582	indeterminant	Missing right eye			
LPR6	10-12	LPR6L-A	LPR6L-CC084	3494	1164.7	615	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC085	2422	807.3	550	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC086	3398	1132.7	570	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC104	5000	1666.7	709	indeterminant	Weight >5000 g	LPR6-CCFT-Ind104		individual
LPR6	10-12	LPR6L-A	LPR6L-CC105	3188	1062.7	603	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC106	2296	765.3	536	indeterminant				
LPR6	10-12	LPR6L-A	LPR6L-CC107	3058	1019.3	554	indeterminant				
LPR6	10-12	LPR6M-A	LPR6M-CC027	3000	1000.0	570	indeterminant				
LPR6	10-12	LPR6M-A	LPR6M-CC028	3050	1016.7	590	indeterminant			LPR6-CCWB-Ind028	individual
LPR6	10-12	LPR6M-A	LPR6M-CC029	1950	650.0	480	indeterminant	Frayed caudal fin			
LPR6	10-12	LPR6M-A	LPR6M-CC030	2050	683.3	475	indeterminant	Frayed caudal fin			
LPR6	10-12	LPR6M-A	LPR6M-CC083	2520	840.0	540	indeterminant				
LPR6	10-12	LPR6M-A	LPR6M-CC100	2452	817.3	548	indeterminant				
LPR6	10-12	LPR6M-A	LPR6M-CC101	2156	718.7	528	indeterminant				
LPR6		LPR6M-A	LPR6M-CC102	2598	866.0	552	indeterminant				
LPR6	10-12	LPR6M-A	LPR6M-CC103	2418	806.0	532	indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC019	2242	747.3	547	indeterminant	Fins damaged by gillnet			
LPR6	10-12	LPR6N-A	LPR6N-CC020	2550	850.0	535	indeterminant	Fins damaged by gillnet			
LPR6	10-12	LPR6N-A	LPR6N-CC021	2963	987.7	570	indeterminant	Fins damaged by gillnet		LPR6-CCWB-Ind021	individual
LPR6		LPR6N-A	LPR6N-CC022	1930	643.3		indeterminant	Fins damaged by gillnet			
LPR6	-	LPR6N-A	LPR6N-CC023	2448	816.0		indeterminant	Fins damaged by gillnet			
LPR6		LPR6N-A	LPR6N-CC024	2200	733.3		indeterminant	Fins damaged by gillnet			
LPR6	-	LPR6N-A	LPR6N-CC025	2134	711.3		indeterminant	Fins damaged by gillnet			
LPR6	10-12	LPR6N-A	LPR6N-CC026	2028	676.0		indeterminant	Fins damaged by gillnet			
LPR6		LPR6N-A	LPR6N-CC045	2600	866.7		indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC046	2060	686.7		indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC047	2198	732.7		indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC048	1960	653.3		indeterminant				
LPR6		LPR6N-A	LPR6N-CC064	1732	577.3		indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC065	2342	780.7		indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC096	2380	793.3		indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC097	2246	748.7	527	indeterminant				

						Length			Sample ID (tissue	Sample ID (tissue	
Reach	RM	Trap ID	Specimen ID	Weight (g)	33% of Wgt	(mm)	Gender	Specimen Comments	type 1)	type 2)	Sample Type
PR6	10-12	LPR6N-A	LPR6N-CC098	2436	812.0	527	indeterminant				
LPR6	10-12	LPR6N-A	LPR6N-CC099	1806	602.0	486	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC037	2032	677.3	530	indeterminant	Fins damaged by gillnet			
LPR7	12-14	LPR7L-A	LPR7L-CC038	1166	388.7		indeterminant	Fins and head damaged by gillnet			
LPR7	12-14	LPR7L-A	LPR7L-CC039	2470	823.3	530	indeterminant	Fins damaged by gillnet			
LPR7	12-14	LPR7L-A	LPR7L-CC040	1690	563.3	475	indeterminant	Fins damaged by gillnet			
LPR7	12-14	LPR7L-A	LPR7L-CC041	2054	684.7	510	indeterminant	Fins damaged by gillnet			
LPR7	12-14	LPR7L-A	LPR7L-CC042	3100	1033.3		indeterminant	Fins damaged by gillnet		LPR7-CCWB-Ind042	individual
LPR7	12-14	LPR7L-A	LPR7L-CC043	2048	682.7	515	indeterminant	Fins damaged by gillnet			
LPR7	12-14	LPR7L-A	LPR7L-CC061	2044	681.3	520	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC062	2090	696.7	530	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC063	2416	805.3	535	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC074	2756	918.7	564	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC075	2274	758.0	528	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC076	2992	997.3	569	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC077	1340	446.7	448	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC078	1516	505.3	471	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC079	2358	786.0	535	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC080	1604	534.7	467	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC081	2262	754.0	558	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC082	2500	833.3	572	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC087	2334	778.0	542	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC088	2076	692.0	512	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC089	2146	715.3	508	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC090	3050	1016.7	569	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC091	2554	851.3	564	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC092	3168	1056.0	569	indeterminant		LPR7-CCFT-Ind092		individual
LPR7	12-14	LPR7L-A	LPR7L-CC093	2104	701.3	549	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC094	2366	788.7	524	indeterminant	Damaged caudal fin			
LPR7		LPR7L-A	LPR7L-CC095	2970	990.0	587	indeterminant				
_PR7	12-14	LPR7L-A	LPR7L-CC113	2044	681.3	532	indeterminant				
LPR7	12-14	LPR7L-A	LPR7L-CC114	1982	660.7	515	indeterminant	Missing both eyes. Damaged caudal fin			
LPR7		LPR7L-A	LPR7L-CC115	2062	687.3	483	indeterminant				
_PR7		LPR7L-A	LPR7L-CC116	1558	519.3	472	indeterminant				
_PR7		LPR7L-A	LPR7L-CC117	2116	705.3		indeterminant				
LPR7		LPR7L-A	LPR7L-CC118	2480	826.7		indeterminant				
LPR7	12-14	LPR7M-A	LPR7M-CC034	2830	943.3		indeterminant				
LPR7		LPR7M-A	LPR7M-CC035	2750	916.7		indeterminant				
_PR7	12-14	LPR7M-A	LPR7M-CC036	1850	616.7		indeterminant				
LPR7		LPR7M-A	LPR7M-CC055	2234	744.7		indeterminant				
_PR7	12-14	LPR7M-A	LPR7M-CC056	2188	729.3		indeterminant				
_PR7	12-14	LPR7M-A	LPR7M-CC057	2806	935.3		indeterminant	Carp subspecies			
_PR7	12-14	LPR7M-A	LPR7M-CC058	2208	736.0		indeterminant				
_PR7		LPR7M-A	LPR7M-CC059	1888	629.3		indeterminant				
_PR7	12-14	LPR7M-A	LPR7M-CC068	3162	1054.0		indeterminant		LPR7-CCFT-Ind068		individual
PR7	12-14	LPR7M-A	LPR7M-CC069	3056	1018.7		indeterminant			LPR7-CCWB-Ind069	individual
.PR7	12-14	LPR7M-A	LPR7M-CC070	2064	688.0	513	indeterminant				

Table Az	Т	a carp sampi	es for analysis			Length			Sample ID (tissue	Sample ID (tissue	
Reach	RM	Trap ID	Specimen ID	Weight (g)	33% of Wgt	(mm)	Gender	Specimen Comments	type 1)	type 2)	Sample Type
LPR7		LPR7M-A	LPR7M-CC071	1902	634.0	, ,	indeterminant		7/5-2/	3/15 =/	
LPR7	_	LPR7M-A	LPR7M-CC072	2326	775.3		indeterminant				
LPR7		LPR7M-A	LPR7M-CC073	1870	623.3		indeterminant				
LPR7		LPR7M-A	LPR7M-CC108	2396	798.7		indeterminant				
LPR7		LPR7M-A	LPR7M-CC109	2052	684.0		indeterminant				
LPR7		LPR7M-A	LPR7M-CC110	2084	694.7		indeterminant				
LPR7	_	LPR7M-A	LPR7M-CC111	1448	482.7		indeterminant				
LPR7		LPR7M-A	LPR7M-CC112	2208	736.0		indeterminant				
LPR8		LPR8R-A	LPR8R-CC127	1684	561.3	475	indeterminant				
LPR8		LPR8R-A	LPR8R-CC128	3106	1035.3		indeterminant				
LPR8		LPR8R-A	LPR8R-CC129	2086	695.3		indeterminant				
LPR8	14-17.4		LPR8R-CC130	2840	946.7		indeterminant				
LPR8	14-17.4		LPR8R-CC131	4150	1383.3		indeterminant		LPR8-CCFT-Ind131		individual
LPR8		LPR8R-A	LPR8R-CC132	2560	853.3		indeterminant				
LPR8	14-17.4		LPR8R-CC142	2820	940.0		indeterminant				
LPR8	14-17.4		LPR8S-CC119	3114	1038.0	602	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC120	2300	766.7		indeterminant				
LPR8	14-17.4		LPR8S-CC121	4658	1552.7		indeterminant		LPR8-CCFT-Ind121		individual
LPR8	14-17.4	LPR8S-A	LPR8S-CC122	2810	936.7	598	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC123	3040	1013.3	597	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC124	2502	834.0	556	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC133	2650	883.3	554	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC134	3630	1210.0	603	indeterminant	Abrasion on ventral side			
LPR8	14-17.4	LPR8S-A	LPR8S-CC135	2750	916.7	562	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC136	1500	500.0	472	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC137	1675	558.3	505	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC138	2200	733.3	520	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC148	2260	753.3	553	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC149	2366	788.7	525	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC150	2260	753.3	516	indeterminant				
LPR8	14-17.4	LPR8S-A	LPR8S-CC151	1430	476.7	451	indeterminant				
LPR8	14-17.4	LPR8U-A	LPR8U-CC139	3140	1046.7	598	indeterminant			LPR8-CCWB-Ind139	individual
LPR8	14-17.4	LPR8U-A	LPR8U-CC140	2768	922.7	555	indeterminant				
LPR8	14-17.4	LPR8U-A	LPR8U-CC141	2358	786.0	553	indeterminant				
LPR8	14-17.4	LPR8V-A	LPR8V-CC143	1840	613.3	510	indeterminant				
LPR8	14-17.4	LPR8X-A	LPR8X-CC144	2625	875.0	549	indeterminant				
LPR8	14-17.4	LPR8X-A	LPR8X-CC145	2120	706.7	523	indeterminant				
LPR8	14-17.4	LPR8X-A	LPR8X-CC146	2884	961.3	609	indeterminant				
LPR8	14-17.4	LPR8X-A	LPR8X-CC147	3064	1021.3	596	indeterminant			LPR8-CCWB-Ind147	individual

Table A3. Proposed omnivores/invertivore samples for analysis (excluding white perch)

					33% of	Length		Sample ID (tissue	Sample ID (tissue		
Species	Reach	Trap ID	Specimen ID	Weight (g)	Wgt	(mm)	Specimen Comments	type 1)	type 2)	Sample Type	Notes
rown bullhead	LPR3	LPR3F-C	LPR3F-AN001	300	100.0	281		LPR3-ANWB-Ind001		individual	
rown bullhead	LPR4	LPR4O-A	LPR4O-AN007	414	138.0	297		LPR4-ANWB-Ind007		individual	
rown bullhead	LPR6	LPR6P-A	LPR6P-AN004	330	110.0	287	Missing right eye	LPR6-ANWB-Ind004		individual	
rown bullhead	LPR6	LPR6P-C	LPR6P-AN005	240	80.0	259		LPR6-ANWB-Ind005		individual	
rown bullhead	LPR6	LPR6S-C	LPR6S-AN002	130	43.3	210	Bulging left eye, damaged caudal fin				
rown bullhead	LPR6	LPR6S-A	LPR6S-AN003	188	62.7	251		LPR6-ANWB-Ind003		individual	
rown bullhead	LPR7	LPR7P-B	LPR7P-AN006	200	66.7	245		LPR7-ANWB-Ind006		individual	
hannel catfish	LPR5	LPR5F-A	LPR5F-IP001	610	203.3	430		LPR5-IPFT-Ind001	LPR5-IPCT-Ind001	individual	
hannel catfish	LPR5	LPR5O-B	LPR5O-IP002	44	14.7	183	< 305 mm				
hannel catfish	LPR5	LPR5O-B	LPR5O-IP014	42	14.0	185	< 305 mm				
hannel catfish	LPR6	LPR6M-A	LPR6M-IP004	708	236.0	435		LPR6-IPFT-Ind004	LPR6-IPCT-Ind004	individual	
hannel catfish	LPR6	LPR6Q-B	LPR6Q-IP003	810	270.0	493		LPR6-IPFT-Ind003	LPR6-IPCT-Ind003	individual	
hannel catfish	LPR6	LPR6S-A	LPR6S-IP007	286	95.3	340					
hannel catfish	LPR7	LPR7L-A	LPR7L-IP005	488	162.7	371	Damaged caudal fin	LPR7-IPFT-Ind005	LPR7-IPCT-Ind005	individual	
hannel catfish	LPR7	LPR7Q-C	LPR7Q-IP006	900	300.0	455		LPR7-IPFT-Ind006	LPR7-IPCT-Ind006	individual	
hannel catfish	LPR8	LPR8R-A	LPR8R-IP008	510	170.0	352		LPR8-IPFT-Ind008	LPR8-IPCT-Ind008	individual	
hannel catfish	LPR8	LPR8R-A	LPR8R-IP009	1490	496.7	510		LPR8-IPFT-Ind009	LPR8-IPCT-Ind009	individual	
hannel catfish	LPR8	LPR8S-A	LPR8S-IP010	925	308.3	460		LPR8-IPFT-Ind010	LPR8-IPCT-Ind010	individual	
hannel catfish	LPR8	LPR8S-A	LPR8S-IP011	1015	338.3	466		LPR8-IPFT-Ind011	LPR8-IPCT-Ind011	individual	
hannel catfish	LPR8	LPR8S-A	LPR8S-IP012	905	301.7	405	Damaged tail	LPR8-IPFT-Ind012	LPR8-IPCT-Ind012	individual	
hannel catfish	LPR8	LPR8S-A	LPR8S-IP013	975	325.0	480		LPR8-IPFT-Ind013	LPR8-IPCT-Ind013	individual	
/hite catfish	LPR2	LPR2K-A	LPR2K-AC018	778	259.3	355		LPR2-ACFT-Ind018	LPR2-ACCT-Ind018	individual	
Vhite catfish	LPR3	LPR3L-A	LPR3L-AC001	628	209.3	370		LPR3-ACFT-Ind001	LPR3-ACCT-Ind001	individual	
Vhite catfish	LPR3	LPR3L-C	LPR3L-AC002	1250	416.7	470		LPR3-ACFT-Ind002	LPR3-ACCT-Ind002	individual	
Vhite catfish	LPR3	LPR3L-B	LPR3L-AC004	310	103.3	290					
Vhite catfish	LPR3	LPR3P-B	LPR3P-AC005	1250	416.7	471		LPR3-ACFT-Ind005	LPR3-ACCT-Ind005	individual	
Vhite catfish	LPR3	LPR3Q-B	LPR3Q-AC003	510	170.0	340		LPR3-ACFT-Ind003	LPR3-ACCT-Ind003	individual	
Vhite catfish	LPR4	LPR4G-A	LPR4G-AC007	2	0.7	54	< 228 mm				
Vhite catfish	LPR4	LPR4L-A	LPR4L-AC023	1294	431.3	437		LPR4-ACFT-Ind023	LPR4-ACCT-Ind023	individual	
Vhite catfish	LPR5	LPR5H-C	LPR5H-AC006	422	140.7	315	Fin erosion	LPR5-ACFT-Ind006	LPR5-ACCT-Ind006	individual	
Vhite catfish	LPR5	LPR5S-A	LPR5S-AC024	1695	565.0	490		LPR5-ACFT-Ind024	LPR5-ACCT-Ind024	individual	
Vhite catfish	LPR6	LPR6P-A	LPR6P-AC011	120	40.0	228	Leach attached to mouth				
Vhite catfish	LPR6	LPR6P-A	LPR6P-AC012	316	105.3	313					
Vhite catfish	LPR6	LPR6P-A	LPR6P-AC016	476	158.7	329		LPR6-ACFT-Ind016	LPR6-ACCT-Ind016	individual	
Vhite catfish	LPR6	LPR6R-B	LPR6R-AC008	680	226.7	385		LPR6-ACFT-Ind008	LPR6-ACCT-Ind008	individual	
Vhite catfish	LPR6	LPR6R-B	LPR6R-AC009	638	212.7	377		LPR6-ACFT-Ind009	LPR6-ACCT-Ind009	individual	
Vhite catfish	LPR6	LPR6S-A	LPR6S-AC010	630	210.0	376	Many leaches attached	LPR6-ACFT-Ind010	LPR6-ACCT-Ind010	individual	
Vhite catfish	LPR6	LPR6S-B	LPR6S-AC013	840	280.0	400		LPR6-ACFT-Ind013	LPR6-ACCT-Ind013	individual	
/hite catfish	LPR7	LPR7C-B	LPR7C-AC015	1.5	0.5	50	< 228 mm				
hite catfish	LPR7	LPR7N-A	LPR7N-AC017	756	252.0	402		LPR7-ACFT-Ind017	LPR7-ACCT-Ind017	individual	
hite catfish	LPR7	LPR7P-C	LPR7P-AC014	984	328.0	398		LPR7-ACFT-Ind014	LPR7-ACCT-Ind014	individual	
/hite catfish	LPR8	LPR8Q-C	LPR8Q-AC019	900	300.0	402		LPR8-ACFT-Ind019	LPR8-ACCT-Ind019	individual	
hite catfish	LPR8	LPR8R-A	LPR8R-AC020	1504	501.3	541		LPR8-ACFT-Ind020	LPR8-ACCT-Ind020	individual	
/hite catfish	LPR8	LPR8R-A	LPR8R-AC021	1366	455.3	504		LPR8-ACFT-Ind021	LPR8-ACCT-Ind021	individual	
/hite catfish	LPR8	LPR8S-A	LPR8S-AC022	590	196.7	358		LPR8-ACFT-Ind022	LPR8-ACCT-Ind022	individual	
/hite sucker	LPR4	LPR4S-A	LPR4S-WS022	362	120.7	325		,			•
/hite sucker	LPR4	LPR4T-A	LPR4T-WS023	434	144.7	327		LPR4-WSFT-Ind023	LPR4-WSCT-Ind023	individual	estimated fillet mass < 150 g

White sucker LPR4T-A LPR4T-WS023 144.7 LPR5 LPR5I-A LPR5I-WS019 964 321.3 420 White sucker LPR5 White sucker LPR5T-A LPR5T-WS020 700 233.3 381 White sucker LPR5 LPR5T-A LPR5T-WS021 616 205.3 375 LPR5 LPR5T-A LPR5T-WS024 180.0 350 White sucker 540 LPR8 White sucker LPR8V-A LPR8V-WS006 620 206.7 386 White sucker LPR8 LPR8V-A LPR8V-WS007 456 152.0 355 White sucker LPR8 LPR8V-A LPR8V-WS008 712 237.3 400

 LPR4-WSFT-Ind023
 LPR4-WSCT-Ind023
 individual
Table A3. Proposed omnivores/invertivore samples for analysis (excluding white perch)

					33% of	Length		Sample ID (tissue	Sample ID (tissue		
Species	Reach	Trap ID	Specimen ID	Weight (g)	Wgt	(mm)	Specimen Comments	type 1)	type 2)	Sample Type	Notes
White sucker	LPR8	LPR8V-A	LPR8V-WS009	566	188.7	376		LPR8-WSFT-Ind009	LPR8-WSCT-Ind009	individual	
White sucker	LPR8	LPR8W-A	LPR8W-WS013	788	262.7	410		LPR8-WSFT-Ind013	LPR8-WSCT-Ind013	individual	
White sucker	LPR8	LPR8W-A	LPR8W-WS014	1032	344.0	453					
White sucker	LPR8	LPR8W-A	LPR8W-WS015	600	200.0	370					
White sucker	LPR8	LPR8W-A	LPR8W-WS016	610	203.3	374					
White sucker	LPR8	LPR8W-A	LPR8W-WS017	888	296.0	420					
White sucker	LPR8	LPR8W-A	LPR8W-WS018	470	156.7	345					
White sucker	LPR8	LPR8X-A	LPR8X-WS010	752	250.7	389					
White sucker	LPR8	LPR8X-A	LPR8X-WS011	696	232.0	392					
White sucker	LPR8	LPR8X-A	LPR8X-WS012	754	251.3	405					

Table A4. Proposed piscivore samples for analysis (excluding American eel)

							Length	Specimen	Sapmle ID (tissue	Sample ID (tissue		
Species	Reach	Trap ID	Collection Method	Specimen ID	Weight (g)	33% of Wgt	(mm)	Comments	type 1)	type 2)	Sample Type	Notes
rgemouth bass	LPR4	LPR4R-A	Boat Electrofishing	LPR4R-MS017	18	6.0	108 < 2	203 mm				
rgemouth bass	LPR4	LPR4S-A	Boat Electrofishing	LPR4S-MS011	20	6.7	118 < 2	203 mm				
rgemouth bass	LPR4	LPR4T-A	Boat Electrofishing	LPR4T-MS012	22	7.3	124 < 2	203 mm				
rgemouth bass	LPR5	LPR5Q-A	Boat Electrofishing	LPR5Q-MS007	32	10.7	133 < 2	203 mm				
rgemouth bass	LPR5	LPR5Q-A	Boat Electrofishing	LPR5Q-MS013	172	57.3	219		LPR5-MSFT-Comp01	LPR5-MSCT-Comp01	composite	n=2 in Comp 1
rgemouth bass	LPR5	LPR5Q-A	Boat Electrofishing	LPR5Q-MS014	21	7.0	119 < 2	203 mm				
rgemouth bass	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-MS008	22	7.3	120 < 2	203 mm				
rgemouth bass	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-MS009	440	146.7	305		LPR5-MSFT-Ind009	LPR5-MSCT-Ind009	individual	estimated fillet mass < 150 g
rgemouth bass	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-MS010	14	4.7	98 < 2	203 mm				
rgemouth bass	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-MS015	320	106.7	279		LPR5-MSFT-Comp01	LPR5-MSCT-Comp01	composite	n=2 in Comp 1
rgemouth bass	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-MS016	16	5.3	107 < 2	203 mm				
rgemouth bass	LPR5	LPR5S-A	Boat Electrofishing	LPR5S-MS018	21	7.0	120 < 2	203 mm				
rgemouth bass	LPR8	LPR8A-C	Minnow Trap	LPR8A-MS004	6.5	2.2	80 < 2	203 mm				
rgemouth bass	LPR8	LPR8H-A	Crayfish Trap	LPR8H-MS003	7	2.3	80 < 2	203 mm				
rgemouth bass	LPR8	LPR8W-A	Boat Electrofishing	LPR8W-MS001	2	0.7	58 < 2	203 mm				
rgemouth bass	LPR8	LPR8W-A	Boat Electrofishing	LPR8W-MS005	2	0.7	55 < 2	203 mm				
rgemouth bass	LPR8	LPR8X-A	Boat Electrofishing	LPR8X-MS002	422	140.7	307		LPR8-MSFT-Ind002	LPR8-MSCT-Ind002	individual	estimated fillet mass < 150 g
rgemouth bass	LPR8	LPR8Y-A	Backpack Electrofishing	LPR8Y-MS006	4.5	1.5	70 < 2	203 mm				
nallmouth bass	LPR4	LPR4S-A	Boat Electrofishing	LPR4S-MD014	308	102.7	294		LPR4-MDFT-Comp01	LPR4-MDCT-Comp01	composite	n=2 in Comp 1
nallmouth bass	LPR4	LPR4S-A	Boat Electrofishing	LPR4S-MD017	158	52.7	234		LPR4-MDFT-Comp01	LPR4-MDCT-Comp01	composite	n=2 in Comp 1
nallmouth bass	LPR5	LPR5Q-A	Boat Electrofishing	LPR5Q-MD015	373	124.3	319		LPR5-MDFT-Comp02	LPR5-MDCT-Comp02	composite	n=2 in Comp 2
nallmouth bass	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-MD013	140	46.7	227		LPR5-MDFT-Comp02	LPR5-MDCT-Comp02	composite	n=2 in Comp 2
nallmouth bass	LPR5	LPR5T-A	Boat Electrofishing	LPR5T-MD016	12	4.0	97 < 2	203 mm				
nallmouth bass	LPR8	LPR8U-A	Boat Electrofishing	LPR8U-MD009	114	38.0	204		LPR8-MDFT-Comp03	LPR8-MDCT-Comp03	composite	estimated fillet mass < 150 g
nallmouth bass	LPR8	LPR8V-A	Boat Electrofishing	LPR8V-MD011	184	61.3	249		LPR8-MDFT-Comp03	LPR8-MDCT-Comp03	composite	estimated fillet mass < 150 g
nallmouth bass	LPR8	LPR8W-A	Boat Electrofishing	LPR8W-MD012	42	14.0	154 < 2	203 mm				
nallmouth bass	LPR8	LPR8Z-A	Backpack Electrofishing	LPR8Z-MD010	109	36.3	190 < 2	203 mm	LPR8-MDFT-Comp03	LPR8-MDCT-Comp03	composite	estimated fillet mass < 150 g
orthern pike	LPR5	LPR5R-A	Boat Electrofishing	LPR5R-EL002	160	53.3	330					
orthern pike	LPR6	LPR6L-A	Gillnet	LPR6L-EL001	2800	933.3	740 Da	amaged cauda	LPR6-ELFT-Ind001	LPR6-ELCT-Ind001	individual	

	s of Sampling Locations where S				Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR1A-A	Minnow Trap	598862	685983	3		
LPR1A-B	Minnow Trap	598921	685982	4		
LPR1A-C	Minnow Trap	598972	685982	5		
LPR1AA-A	Minnow Trap	598775	686320	5	6	
LPR1AA-B	Minnow Trap	598813	686336	6	7	
LPR1AA-C	Minnow Trap	598850	686350	7	2	
LPR1B-A	Minnow Trap	598145	686254	2		1
LPR1B-B	Minnow Trap	598185	686213	1		
LPR1B-C	Minnow Trap	598209	686193	3		
LPR1BB-A	Minnow Trap	598257	686353	2	3	
LPR1BB-B	Minnow Trap	598312	686378	2	2	
LPR1BB-C	Minnow Trap	598338	686356	3	10	
LPR1D-A	Minnow Trap	597403	690438	3	18	
LPR1D-B	Minnow Trap	597400	690423	4		
LPR1D-C	Minnow Trap	597396	690412	2		1
LPR1G-A	Trotline	597299	689861	2	4	
LPR1G-B	Trotline	597272	689789	2	1	
LPR1G-C	Trotline	597285	689722	5	1	
LPR1H-A	Trotline	596678	687147	2	1	
LPR1H-B	Trotline	596643	687098	1		
LPR1H-C	Trotline	596611	687015	1	1	
LPR1I-A	Gillnet	597827	691568	9	60	1
LPR1J-A	Gillnet	597398	688339	10	87	3
LPR1K-A	Gillnet	596645	685592	12	88	2
LPR1L-A	Crab Trap	598999	685962	2	12	
LPR1L-B	Crab Trap	598956	685956	2	9	
LPR1M-A	Crab Trap	598210	686152	2	9	
LPR1M-B	Crab Trap	598174	686182	1	8	
LPR1M-C	Crab Trap	598135	686244		9	
LPR1N-A	Crab Trap	597395	690389		4	
LPR1N-B	Crab Trap	597387	690368		9	
LPR1N-C	Crab Trap	597378	690344		2	
LPR10-A	Eel Trap	598904	685938	7		
LPR1O-B	Eel Trap	598990	685941	9	1	3
LPR1O-C	Eel Trap	599042	685966	7		
LPR1P-A	Eel Trap	598131	686206	5		
LPR1P-B	Eel Trap	598165	686155	4	1	
LPR1P-C	Eel Trap	598236	686094	9		
LPR1Q-A	Eel Trap	597397	690396	7	6	1
LPR1Q-B	Eel Trap	597383	690365		43	
LPR1R-A	Dip Net	598449	686449		1	
LPR2B-A	Minnow Trap	596928	695100	3	5	
LPR2B-B	Minnow Trap	596925	695115	1	63	
LPR2B-C	Minnow Trap	596907	695131	2	11	
LPR2C-A	Minnow Trap	594657	695226	3	2	1
LPR2C-B	Minnow Trap	594680	695222	7	2	
LPR2C-C	Minnow Trap	594709	695217	5		
LPR2E-A	Minnow Trap	590126	692885	6	1	1
LPR2E-B	Minnow Trap	590172	692915	10	1	
LPR2E-C	Minnow Trap	590211	692944	9	1	
LPR2F-A	Trotline	590324	692663		1	
LPR2F-B	Trotline	590394	692681	1		
LPR2G-A	Trotline	592218	695220	2	1	
LPR2H-B	Trotline	596999	695616	2		
LPR2H-C	Trotline	597072	695600	1	1	
LPR2I-A	Gillnet	590155	692581	8	30	
LPR2J-A	Gillnet	594631	695595	5	34	
LPR2K-A	Gillnet	597724	695166	12	77	5
LPR2L-A	Crab Trap	596867	695157		7	
LPR2L-B	Crab Trap	596860	695179		1	
LPR2L-C	Crab Trap	596847	695184		6	
LPR2M-A	Crab Trap	594563	695228	1	2	
LPR2M-B	Crab Trap	594545	695240		10	
LPR2M-C	Crab Trap	594496	695245		5	

	s of Sampling Locations where S	pecimens caught			Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR2N-A	Crab Trap	590310	692957	2	6	
LPR2N-B	Crab Trap	590365	693000		6	
LPR2N-C	Crab Trap	590422	693046		9	
LPR2O-A	Eel Trap	596832	695194	5	1	
LPR2O-B	Eel Trap	596837	695196	8	3	1
LPR2O-C	Eel Trap	596813	695207	5	4	
LPR2P-A	Eel Trap	594464	695224	8		
LPR2P-B	Eel Trap	594418	695228	9		
LPR2P-C	Eel Trap	594383	695204	8		
LPR2Q-A	Eel Trap	590476	693104	8		
LPR2Q-B	Eel Trap	590510	693154	9		
LPR2Q-C	Eel Trap	590548	693209	8		
LPR2R-A	Dip Net	596083	695248	1	1	3
LPR3A-A	Minnow Trap	588537	692671	1	1	
LPR3A-B	Minnow Trap	588561	692644	1	2	
LPR3A-C	Minnow Trap	588560	692660	2	3	
LPR3B-A LPR3B-B	Minnow Trap	587086 587129	692516 692517	2	3	
	Minnow Trap			1	5	
LPR3C-A LPR3C-C	Minnow Trap	585170 585157	694440	2	3	
	Minnow Trap		694491		4	
LPR3F-A	Crab Trap	584943	698212	2	4	
LPR3F-B	Crab Trap	584935	698184			
LPR3F-C	Crab Trap	584937 584687	698223 696034	2	3 4	
LPR3G-A LPR3G-B	Crab Trap	584695	696006		5	
LPR3G-C	Crab Trap Crab Trap	584706	695966		6	
					6	
LPR3H-A LPR3H-B	Crab Trap	585660 585655	694238 694258		2	
LPR3H-C	Crab Trap	585642	694258		2	
LPR3I-A	Crab Trap Eel Trap	585101	694752	2	2	
LPR3I-B		585107	694732	1	2	
LPR3I-C	Eel Trap Eel Trap	585107	694727	3	2	
LPR3J-A	Eel Trap	585077	695935	<u> </u>	1	
LPR3J-B	Eel Trap	585077	695956		3	
LPR3J-C	Eel Trap	585057	695993	1	2	
LPR3K-A	Eel Trap	584668	698342	1	3	
LPR3K-B	Eel Trap	584666	698315		2	
LPR3K-C	Eel Trap	584662	698283	1	5	
LPR3L-A	Trotline	585034	698912		2	
LPR3L-B	Trotline	585019	698886		3	
LPR3L-C	Trotline	584991	698910	2	3	
LPR3M-A	Gillnet	584798	697881	5	41	1
LPR3N-A	Gillnet	584921	695554	8	30	-
LPR3O-A	Gillnet	588368	692495	14	90	7
LPR3P-A	Trotline	588105	692248		1	·
LPR3P-B	Trotline	588111	692223	1	2	
LPR3P-C	Trotline	588161	692285		2	
LPR3Q-A	Trotline	585049	694994		1	
LPR3Q-B	Trotline	585068	694984		3	
LPR3Q-C	Trotline	585084	694997		1	
LPR4C-B	Minnow Trap	586719	704097		1	
LPR4D-A	Minnow Trap	587489	705720	2		
LPR4D-B	Minnow Trap	587496	705790		1	
LPR4D-C	Minnow Trap	587572	705839	2		
LPR4F-A	Crab Trap	587283	705973		1	
LPR4F-B	Crab Trap	587313	706034		3	
LPR4F-C	Crab Trap	587352	706120	1	5	
LPR4G-A	Crab Trap	586996	704092		4	
LPR4G-B	Crab Trap	587032	704128		7	
LPR4G-C	Crab Trap	587029	704104	1	2	
LPR4H-A	Crab Trap	585274	700807		6	
LPR4H-B	Crab Trap	585272	700811		4	
LPR4H-C	Crab Trap	585266	700764		3	
LPR4I-B	Eel Trap	585249	700695	1	-	

	s of Sampling Locations where S				Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR4I-C	Eel Trap	585243	700671		1	
LPR4J-B	Eel Trap	586874	703850	1		
LPR4J-C	Eel Trap	586871	703813	1	1	
LPR4L-A	Gillnet	585166	700324	5	15	
LPR4M-A	Trotline	585151	701600	2	1	
LPR4M-B	Trotline	585118	701504	1	3	
LPR4M-C	Trotline	585181	701661		2	
LPR4N-A	Trotline	587156	704379		3	
LPR4N-B	Trotline	587082	704273	1		
LPR4N-C	Trotline	587180	704463	2	2	
LPR4O-A	Gillnet	587268	705741	4	10	
LPR4P-A	Gillnet	588651	707444	2	11	
LPR4Q-A	Trotline	589249	708215		3	
LPR4Q-C	Trotline	589188	708184	1	1	
LPR4R-A	Boat Electrofishing	587094	705442	4	8	•
LPR4S-A	Boat Electrofishing	588168	706783	2	18	2
LPR4T-A	Boat Electrofishing	589042	707878	2	18	1
LPR5A-A	Minnow Trap	589448	709268		5	1
LPR5A-B	Minnow Trap	589436	709275		2	2
LPR5A-C	Minnow Trap	589416	709238		2 1	1
LPR5B-B	Minnow Trap	590234	712386		2	1
LPR5B-C	Minnow Trap	590244	712406			
LPR5C-C	Minnow Trap	592011	717746	2	1	
LPR5E-A	Gillnet	589795	711734	3	16	
LPR5F-A	Trotline	589948	711839	2		
LPR5F-B	Trotline	589880	711711	3	3	
LPR5F-C	Trotline	589980	711904	1	2	
LPR5G-A	Gillnet	591330 591608	714199 715061	5 1	7 2	
LPR5H-A LPR5H-B	Trotline Trotline	591553	713061	1	2	
LPR5H-C	Trotline	591631	714961		3	
LPR5I-A	Gillnet	591812	713124	2	6	
LPR5J-A	Trotline	592097	717356		2	
LPR5J-B	Trotline	592143	717361		2	
LPR5J-C	Trotline	592082	717440	2	2	
LPR5K-B	Crab Trap	589628	708970	1	1	
LPR5L-B	Eel Trap	589629	709115		1	
LPR5M-A	Crab Trap	590284	712972		4	
LPR5M-B	Crab Trap	590294	712998		6	
LPR5M-C	Crab Trap	590300	713002		4	
LPR5O-A	Crab Trap	591814	717645		9	
LPR5O-B	Crab Trap	591812	717668		10	
LPR5O-C	Crab Trap	591810	717693		3	
LPR5P-A	Eel Trap	591788	717782			1
LPR5P-B	Eel Trap	591778	717795	1	1	
LPR5Q-A	Boat Electrofishing	592183	717297	4	45	1
LPR5R-A	Boat Electrofishing	592455	716313	2	31	2
LPR5S-A	Boat Electrofishing	589702	711831	6	18	
LPR5T-A	Boat Electrofishing	589609	709404	3	25	1
LPR6A-C	Minnow Trap	592584	722334	1		
LPR6B-B	Minnow Trap	593382	723296		1	
LPR6B-C	Minnow Trap	593417	723324	1		
LPR6C-A	Minnow Trap	594226	723825		1	
LPR6C-C	Minnow Trap	594285	723846			1
LPR6D-C	Minnow Trap	595166	724121	1		
LPR6F-A	Crab Trap	592579	722367	1	20	
LPR6F-B	Crab Trap	592587	722410	1	7	
LPR6F-C	Crab Trap	592594	722454		1	
LPR6G-A	Crab Trap	593235	723579		14	
LPR6G-B	Crab Trap	593267	723582		3	
LPR6G-C	Crab Trap	593262	723569		9	
LPR6H-A	Crab Trap	595232	724124		5	
LPR6H-B	Crab Trap	595283	724160	1	6	1
LPR6I-A	Crayfish Trap	592606	722494			1

					Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR6I-B	Crayfish Trap	592600	722532	1	2	
LPR6J-A	Crayfish Trap	593319	723608		1	
LPR6J-C	Crayfish Trap	593402	723629		1	1
LPR6K-A	Crayfish Trap	595459	724229		1	
LPR6L-A	Gillnet	596201	724678	2	19	3
LPR6M-A	Gillnet	594051	723740	1	11	1
LPR6N-A	Gillnet	592325	722258	9	24	2
LPR6O-A	Trotline	596688	725981		1	
LPR6O-B	Trotline	596678	725967	1	1	
LPR6O-C	Trotline	596678	725904		_	1
LPR6P-A	Trotline	595771	724220	1	5	
LPR6P-B	Trotline	595841	724267	1	4	
LPR6P-C	Trotline	595891	724319		1	1
LPR6Q-A	Trotline	592194	721861		1	1
LPR6Q-B	Trotline	592201	721923	1	2	
LPR6R-A	Trotline	593804	723468		1	
LPR6R-B	Trotline	593857	723476	1	2 2	
LPR6R-C	Trotline	593899	723497	1		
LPR6S-A	Trotline	592481	722901	1	3	
LPR6S-B LPR6S-C	Trotline Trotline	592495 592503	722923 722956	1	1 1	
LPR6V-A	Boat Electrofishing	592503	722956	1	1 1	
LPR7A-A	Minnow Trap	596648	721383	1	1	
LPR7A-A	Minnow Trap	596769	728955	2		
LPR7B-B	Minnow Trap	596736	729280	1		
LPR7C-A	Minnow Trap	596686	733029	3		
LPR7C-B	Minnow Trap	596697	733065	2	1	
LPR7D-B	Minnow Trap	597441	734864		1	
LPR7E-A	Minnow Trap	597316	735371	1	1	
LPR7E-C	Minnow Trap	597308	735334	1	1	
LPR7F-A	Crab Trap	597445	734965	-	6	
LPR7F-B	Crab Trap	597453	734999		1	
LPR7F-C	Crab Trap	597452	735017		8	1
LPR7G-A	Crab Trap	597342	735289		9	
LPR7G-B	Crab Trap	597342	735269		5	
LPR7G-C	Crab Trap	597339	735250		13	
LPR7H-A	Crab Trap	596716	728849		2	1
LPR7H-B	Crab Trap	596780	728831		7	
LPR7H-C	Crab Trap	596737	728804		1	
LPR7I-A	Crayfish Trap	597472	735056		2	
LPR7I-B	Crayfish Trap	597479	735092		1	
LPR7I-C	Crayfish Trap	597496	735115		1	
LPR7J-B	Crayfish Trap	597335	735453		2	
LPR7J-C	Crayfish Trap	597338	735473		1	
LPR7K-A	Crayfish Trap	596730	728805		2	
LPR7K-C	Crayfish Trap	596772	728710		2	
LPR7L-A	Gillnet	597481	735489		37	1
LPR7M-A	Gillnet	596952	728472	4	21	
LPR7N-A	Trotline	597320	735075	3	1	
LPR7N-B	Trotline	597329	735030		1	
LPR7N-C	Trotline	597348	735158	1		
LPR7O-A	Trotline	596946	733355		1	
LPR7O-C	Trotline	596980	733527		1	
LPR7P-B	Trotline	596286	731502		1	
LPR7P-C	Trotline	596325	731594		1	
LPR7Q-A	Trotline	596587	729111		1	
LPR7Q-C	Trotline	596531	729221		2	
LPR7R-A	Boat Electrofishing	597139	734602			1
LPR7U-A	Boat Electrofishing	596913	728915			2
LPR8A-A	Minnow Trap	597559	737849	1		
LPR8A-C	Minnow Trap	597558	737808		1	
	Minnow Trap	599182	741745		2	
LPR8D-A LPR8D-C	Minnow Trap	599151	741744	1		

	s of Sampling Locations where S				Number of Specimens	
Trap ID	Collection Method	Final Easting	Final Northing	Specimens for Community Survey	Fish/Decapod Retained for Potential Chemistry	Fish Retained for Heath Assessment
LPR8F-B	Minnow Trap	596950	745766	1		
LPR8G-B	Crayfish Trap	599034	741833	1		
LPR8H-A	Crayfish Trap	597535	737793		2	
LPR8H-B	Crayfish Trap	597536	737784	1		
LPR8I-B	Crayfish Trap	597810	744583	1		
LPR8J-A	Crab Trap	599110	741769		1	
LPR8J-B	Crab Trap	599098	741776		5	
LPR8J-C	Crab Trap	599083	741795		2	
LPR8K-A	Crab Trap	597509	737734	1	4	
LPR8K-B	Crab Trap	597504	737722		11	
LPR8K-C	Crab Trap	597505	737709		4	
LPR8L-A	Crab Trap	597798	744553		2	
LPR8M-A	Crab Trap	597014	745965	1	2	
LPR8M-B	Crab Trap	597003	745977	1	1	
LPR8P-A	Trotline	600701	738021	1		
LPR8P-B	Trotline	600758	737920	1		
LPR8P-C	Trotline	600715	737892	2		
LPR8Q-C	Trotline	599236	737597	1	1	
LPR8R-A	Gillnet	600828	738621	6	21	2
LPR8S-A	Gillnet	597833	738329	1	33	
LPR8T-C	Crayfish Trap	596976	745970	2		
LPR8U-A	Boat Electrofishing	600528	737366	12	27	2
LPR8V-A	Boat Electrofishing	599755	740370	8	77	3
LPR8W-A	Boat Electrofishing	599277	741575	10	23	5
LPR8X-A	Boat Electrofishing	599354	741619	8	26	4
LPR8Y-A	Backpack Electrofishing	596961	746132	9	111	1
LPR8Z-A	Backpack Electrofishing	595612	746920	7	392	5

Table 1. Summ	ary of p	roposed white per	ch - REVISED				Estimated M			
				'	Sample ID (tissue			Whole body		
Species	Reach	RM	Location (s)	type 1)	type 2)	Fillet (g)	Carcass (g)	mass (g)	n	Notes
White perch	1	RM 0 - RM 2	LPR1G		LPR1-MAWB-Ind138			220	1	
White perch	1	RM 0 - RM 2	LPR1J	LPR1-MAFT-Ind145	LPR1-MACT-Ind145	181	363		1	
White perch	1	RM 0 - RM 2	LPR1J	LPR1-MAFT-Comp01		139			3	
White perch	2	RM 2 - RM 4	LPR2H		LPR2-MAWB-Ind158			272	1	
White perch	3	RM 4 - RM 6	LPR3G	LPR3-MAFT-Comp02		149			6	EPA added sample 6/7/10
White perch	3	RM 4 - RM 6	LPR3M	LPR3-MAFT-Comp03		156			7	
White perch	3	RM 4 - RM 6	LPR3M	LPR3-MAFT-Comp04		147			5	
White perch	3	RM 4 - RM 6	LPR3N	LPR3-MAFT-Comp05		139			6	EPA added sample 6/7/10
White perch	3	RM 4 - RM 6	LPR3O		LPR3-MAWB-Comp06			272	4	NEW CPG-added sample
White perch	3	RM 4 - RM 6	LPR3O	LPR3-MAFT-Comp07		152			3	
White perch	3	RM 4 - RM 6	LPR3O	LPR3-MAFT-Comp08		167			5	
White perch	3	RM 4 - RM 6	LPR3O		LPR3-MAWB-Comp09			250	3	CPG added fish to sample to increase mass
White perch	3	RM 4 - RM 6	LPR3O		LPR3-MAWB-Comp10			348	4	CPG added fish to sample to increase mass
White perch	3	RM 4 - RM 6	LPR3O		LPR3-MAWB-Comp11			378	5	NEW CPG-added sample
White perch	3	RM 4 - RM 6	LPR3O		LPR3-MAWB-Comp12			282	4	NEW CPG-added sample
White perch	3	RM 4 - RM 6	LPR3O	LPR3-MAFT-Comp13		167			7	NEW CPG-added sample
White perch	3	RM 4 - RM 6	LPR3O		LPR3-MAWB-Comp30			374	6	NEW CPG-added sample
White perch	4	RM 6 - RM 8	LPR4P		LPR4-MAWB-Comp14			274	2	
White perch	4	RM 6 - RM 8	LPR4R		LPR4-MAWB-Comp15 ^a			176	4	
White perch	4	RM 6 - RM 8	LPR4S	LPR4-MAFT-Comp16	·	154			5	NEW CPG-added sample
White perch	4	RM 6 - RM 8	LPR4T	LPR4-MAFT-Comp17		225			7	CPG added fish to sample to increase mass
White perch	5	RM 8 - RM 10	LPR5E, 5S ^b	·	LPR5-MAWB-Comp18			390	5	·
White perch	5	RM 8 - RM 10	LPR5I		LPR5-MAWB-Comp19			198	3	NEW CPG-added sample
White perch	5	RM 8 - RM 10	LPR5R	LPR5-MAFT-Comp20		172			3	
White perch	5	RM 8 - RM 10	LPR5R	LPR5-MAFT-Comp21		232			8	EPA added sample 6/7/10
White perch	5	RM 8 - RM 10	LPR5T	LPR5-MAFT-Comp22 ^a		149			8	
White perch	5	RM 8 - RM 10	LPR5T	LI NO WIAI I COMPZZ	LPR5-MAWB-Comp23 ^a	143		256	8	
White perch	6		LPR6L	LPR6-MAFT-Ind122	LPN3-IVIAVVB-CUITIP23	210		230	1	
White perch	6		LPR6Q	LF NO-IVIAF I-IIIU122	LPR6-MAWB-Ind128	210		136	1	
	6		-	LDDC MACT Company	EL MO-INIMAND-IIIU 120	155		130		
White perch			LPR6N, 6R ^c	LPR6-MAFT-Comp24		155		45-	2	
White perch	7		LPR7J, 7N ^d		LPR7-MAWB-Comp25			176	3	
White perch	7		LPR7Q		LPR7-MAWB-Ind123			202	1	
White perch	8	RM 14 - RM 17.4		LPR8-MAFT-Comp26		157			5	
White perch	8	RM 14 - RM 17.4		LPR8-MAFT-Comp27		148			6	
White perch	8	RM 14 - RM 17.4			LPR8-MAWB-Comp28			172	3	
White perch	8	RM 14 - RM 17.4			LPR8-MAWB-Comp29			198	3	
White perch	8	RM 14 - RM 17.4		LPR8-MAFT-Comp31		141			4	NEW CPG-added sample
White perch	8	RM 14 - RM 17.4	LPR8V		LPR8-MAWB-Comp32			164	3	NEW CPG-added sample

^a Sample includes fish that are < 152 mm.

Shaded cells indicate the samples targeted for QC analysis

^b LPR5E and LPR5S are adjacent to one another.

^c LPR6N and LPR6Q within ~0.5 miles of each other

^d LPR7J and LPR7N are adjacent to one another.

Table 2. Proposed white perch samples for analysis - REVISED

Table 2. Propos	ed white per	ch samples	ior analysis -	KEVISED			1							_	
								EPA							
		Location			Weight	33% of	Length		Sample ID (tissue	Sample ID				Reason for exclusion from	
C	D l.		T ID	Constant ID	_		_		,	· ·	Committee Towns	EDAl-			
Species	Reach	ID	Trap ID	Specimen ID	(g)	Wgt	(mm)	No.	type 1)	(tissue type 2)	Sample Type	EPA sample	Notes	composite?	Specimen Comments
White perch	LPR1	LPR1G	LPR1G-B	LPR1G-MA138	220	73	3 255	1		LPR1-MAWB-Ind138	individual	WB			
White perch	LPR1	LPR1J	LPR1J-A	LPR1J-MA139	148	49	218	2	LPR1-MAFT-Comp01		composite	fillet			
White perch	LPR1	LPR1J	LPR1J-A	LPR1J-MA140	142	47	7 197	2	LPR1-MAFT-Comp01		composite	fillet			
White perch	LPR1	LPR1J	LPR1J-A	LPR1J-MA141	128	43	3 205	2	LPR1-MAFT-Comp01		composite	fillet			
White perch			LPR1J-A	LPR1J-MA145	544				LPR1-MAFT-Ind145	LPR1-MACT-Ind145	· ·	fillet/carcass			
· ·			LPR1P-B	LPR1P-MA154	4	101	1 56		ELIKE WALL HIGHS	Littl When males		fillet		< 152 mm	
White perch					1	0					<u> </u>				
White perch			LPR1Q-A	LPR1Q-MA147	-						· ·	fillet		< 152 mm	
White perch			LPR1Q-A	LPR1Q-MA150	5	2					· · ·	fillet		< 152 mm	
White perch			LPR1Q-B	LPR1Q-MA153	6	2					composite	fillet		< 152 mm	
White perch	LPR1	LPR1Q	LPR1Q-B	LPR1Q-MA155	0.9	0) 44				composite	fillet		< 152 mm	
White perch	LPR2	LPR2B	LPR2B-C	LPR2B-MA161	3	1	1 60							< 152 mm	
White perch	LPR2	LPR2C	LPR2C-B	LPR2C-MA149	0.7	0	47				composite	fillet		< 152 mm	
White perch	LPR2	LPR2C	LPR2C-B	LPR2C-MA151	2	1	1 61				composite	fillet		< 152 mm	
White perch	LPR2	LPR2C	LPR2C-A	LPR2C-MA163	1	0) 48				composite	fillet		< 152 mm	
White perch			LPR2C-A	LPR2C-MA164	1	0	51				<u> </u>	fillet		< 152 mm	
White perch			LPR2E-B	LPR2E-MA142	0.5						· ·	fillet		< 152 mm	
· ·			LPR2E-A	LPR2E-MA159	6	2	, ,,,				<u> </u>	fillet		< 152 mm	
White perch					-					LDD2 MANA/D In d1E0				\ 132 IIIII	
White perch			LPR2H-C	LPR2H-MA158	272					LPR2-MAWB-Ind158	individual	WB			
White perch			LPR2I-A	LPR2I-MA157	90								only 1 individual selected from Reach 2 for analysis		
White perch			LPR2O-C	LPR2O-MA143	1.5		1 52				· ·	fillet		< 152 mm	
White perch			LPR2O-C	LPR2O-MA144	3	1					composite	fillet		< 152 mm	
White perch	LPR2	LPR2O	LPR2O-C	LPR2O-MA146	0.2	0	38				composite	fillet		< 152 mm	
White perch	LPR2	LPR2O	LPR2O-B	LPR2O-MA148	1	0	55				composite	fillet		< 152 mm	
White perch	LPR2	LPR2O	LPR2O-A	LPR2O-MA152	0.5	0) 42				composite	fillet		< 152 mm	
White perch	LPR2	LPR2O	LPR2O-C	LPR2O-MA156	1.1	0	51				composite	fillet		< 152 mm	
White perch			LPR2O-B	LPR2O-MA160	0.7) 44				· ·	fillet		< 152 mm	
White perch			LPR2O-B	LPR2O-MA162	1.5		1 47				· ·	fillet		< 152 mm	
White perch			LPR3A-C	LPR3A-MA018	4	1	1 74				<u> </u>	fillet		< 152 mm	
White perch			LPR3A-C	LPR3A-MA091	1) 65				<u> </u>	fillet		< 152 mm	
					1	0					· ·				paracita fall off
White perch			LPR3A-C	LPR3A-MA093	1	- 0					· ·	fillet		< 152 mm	parasite fell off
White perch			LPR3A-A	LPR3A-MA104	4	1	1 67				· ·	fillet		< 152 mm	
White perch			LPR3A-B	LPR3A-MA105	4	1	1 62				· ·	fillet		< 152 mm	
White perch			LPR3A-B	LPR3A-MA106	4	1	- 00				composite	fillet		< 152 mm	
White perch			LPR3B-B	LPR3B-MA039	1	0	-							< 152 mm	
White perch	LPR3	LPR3B	LPR3B-B	LPR3B-MA040	6	2	2 74							< 152 mm	
White perch	LPR3	LPR3C	LPR3C-C	LPR3C-MA087	6	2	2 74							< 152 mm	
White perch	LPR3	LPR3C	LPR3C-C	LPR3C-MA088	4	1	1 70							< 152 mm	
White perch	LPR3	LPR3C	LPR3C-C	LPR3C-MA090	1	0	50							< 152 mm	
White perch	LPR3	LPR3G	LPR3G-A	LPR3G-MA007	88	29	180	105	LPR3-MAFT-Comp02		composite	fillet	**EPA added sample 6/7/10 (Comp02)		
White perch	LPR3	LPR3G	LPR3G-B	LPR3G-MA008	40	13	3 140							< 152 mm	
White perch	LPR3		LPR3G-C	LPR3G-MA009	58	19	176	105	LPR3-MAFT-Comp02		composite	fillet	**EPA added sample 6/7/10 (Comp02)		
White perch			LPR3G-C	LPR3G-MA010	58				LPR3-MAFT-Comp02		· ·	fillet	**EPA added sample 6/7/10 (Comp02)		
White perch			LPR3G-C	LPR3G-MA033	2						composite		277 daded sample syry 20 (compon)	< 152 mm	
White perch			LPR3G-B	LPR3G-MA034	110				LPR3-MAFT-Comp02		composite	fillat	**EPA added sample 6/7/10 (Comp02)	132 11111	
											<u> </u>				
White perch			LPR3G-B	LPR3G-MA035	56				LPR3-MAFT-Comp02			fillet	**EPA added sample 6/7/10 (Comp02)		
White perch			LPR3G-B	LPR3G-MA036	76				LPR3-MAFT-Comp02		composite	тшет	**EPA added sample 6/7/10 (Comp02)	150	
White perch			LPR3G-A	LPR3G-MA038	24									< 152 mm	
White perch			LPR3H-A	LPR3H-MA047	6									< 152 mm	
White perch	LPR3		LPR3I-A	LPR3I-MA045	1	0	, ,,,							< 152 mm	Parasite attached (copepod)
White perch	LPR3	LPR3I	LPR3I-B	LPR3I-MA108	1	0	60							< 152 mm	
White perch	LPR3	LPR3I	LPR3I-B	LPR3I-MA109	4	1	1 62							< 152 mm	
White perch	LPR3	LPR3J	LPR3J-B	LPR3J-MA042	4	1	1 67							< 152 mm	
White perch			LPR3J-B	LPR3J-MA043	4	1	1 71							< 152 mm	
White perch			LPR3J-B	LPR3J-MA044	6	2								< 152 mm	
White perch			LPR3J-A	LPR3J-MA063	1	0								< 152 mm	
			LPR3J-C	LPR3J-MA089	1	0								< 152 mm	
White perch			LPR3K-B		3		1 67								invenile
White perch				LPR3K-MA019	-									< 152 mm	juvenile
White perch			LPR3K-B	LPR3K-MA020	2		1 65							< 152 mm	juvenile
White perch			LPR3K-A	LPR3K-MA021	7	2								< 152 mm	juvenile
White perch			LPR3K-A	LPR3K-MA022	2	1	1 66							< 152 mm	juvenile
White perch			LPR3K-C	LPR3K-MA023	4	1	1 67							< 152 mm	juvenile
White perch			LPR3K-C	LPR3K-MA024	2	1	1 53							< 152 mm	juvenile
White perch	LPR3	LPR3K	LPR3K-C	LPR3K-MA046	6	2	2 75							< 152 mm	
White perch	LPR3	LPR3K	LPR3K-C	LPR3K-MA099	4	1	1 61							< 152 mm	
White perch	LPR3	LPR3K	LPR3K-C	LPR3K-MA100	4	1	1 64							< 152 mm	
White perch	LPR3	LPR3K	LPR3K-A	LPR3K-MA101	4	1	1 65							< 152 mm	
													·		

Table 2. Proposed white perch samples for analysis - REVISED

Table 2.110p03	cu winte per	cii sairipies	for analysis - F	VEAISED											
								EPA							
		Location			Weight	33% of	Length	reference	Sample ID (tissue	Sample ID				Reason for exclusion from	
Species	Reach	ID	Trap ID	Specimen ID	(g)	Wgt	(mm)	No.	type 1)	(tissue type 2)	Sample Type	EPA sample	Notes	composite?	Specimen Comments
			<u>'</u>	-	.0,		` '			(tissue type 2)			Notes	composite:	Specimen Comments
White perch			LPR3M-A	LPR3M-MA011	62	21			LPR3-MAFT-Comp03		composite				
White perch	LPR3		LPR3M-A	LPR3M-MA012	62	21		5	LPR3-MAFT-Comp03		composite	fillet			
White perch	LPR3	LPR3M	LPR3M-A	LPR3M-MA014	66	22	160	5	LPR3-MAFT-Comp03		composite	fillet			
White perch	LPR3	LPR3M	LPR3M-A	LPR3M-MA017	98	33	182	. 5	LPR3-MAFT-Comp03		composite	fillet			missing eye
White perch	LPR3	LPR3M	LPR3M-A	LPR3M-MA025	58	19	163	5	LPR3-MAFT-Comp03		composite	fillet			damaged opercula likely from gill net
White perch	LPR3	LPR3M	LPR3M-A	LPR3M-MA026	65	22	108				·			< 152 mm	
White perch			LPR3M-A	LPR3M-MA027	62	21		5	LPR3-MAFT-Comp03		composite	fillet			
White perch			LPR3M-A	LPR3M-MA028	78	26			LPR3-MAFT-Comp04		composite	fillet			missing right eye
White perch			LPR3M-A	LPR3M-MA029	86	29			LPR3-MAFT-Comp04		composite	fillet			This sing right eye
White perch			LPR3M-A	LPR3M-MA030	60	20			LPR3-MAFT-Comp03		composite	fillet			
			LPR3M-A	LPR3M-MA031	76	25					· ·				anudal fin markially reliation
White perch									LPR3-MAFT-Comp04		composite	fillet			caudal fin partially missing
White perch			LPR3M-A	LPR3M-MA032	108	36			LPR3-MAFT-Comp04		composite	fillet			
White perch			LPR3M-A	LPR3M-MA037	92	31			LPR3-MAFT-Comp04		composite	fillet			
White perch			LPR3N-A	LPR3N-MA041	54	18			LPR3-MAFT-Comp05		composite	fillet	**EPA added sample 6/7/10 (Comp 05)		
White perch			LPR3N-A	LPR3N-MA092	84	28			LPR3-MAFT-Comp05		composite	fillet	**EPA added sample 6/7/10 (Comp 05)		
White perch	LPR3	LPR3N	LPR3N-A	LPR3N-MA095	66	22	159	104	LPR3-MAFT-Comp05		composite	fillet	**EPA added sample 6/7/10 (Comp 05)		
White perch	LPR3	LPR3N	LPR3N-A	LPR3N-MA096	78	26	169	104	LPR3-MAFT-Comp05		composite	fillet	**EPA added sample 6/7/10 (Comp 05)		
White perch	LPR3	LPR3N	LPR3N-A	LPR3N-MA097	56	19	159	104	LPR3-MAFT-Comp05		composite	fillet	**EPA added sample 6/7/10 (Comp 05)		
White perch	LPR3	LPR3N	LPR3N-A	LPR3N-MA098	78	26	176	104	LPR3-MAFT-Comp05		composite	fillet	**EPA added sample 6/7/10 (Comp 05)		
White perch			LPR3O-A	LPR3O-MA001	56	19				LPR3-MAWB-Comp06		WB	NEW CPG-added sample (Comp06)		
White perch			LPR3O-A	LPR3O-MA002	82	27				LPR3-MAWB-Comp06		WB	NEW CPG-added sample (Comp06)		
White perch			LPR3O-A	LPR3O-MA003	76					LPR3-MAWB-Comp06	<u> </u>	WB	NEW CPG-added sample (Comp06)		
White perch			LPR3O-A	LPR3O-MA004	58	19				LPR3-MAWB-Comp06		WB	NEW CPG-added sample (Comp06)		
White perch			LPR3O-A	LPR3O-MA005	50	17				LI NO WIAVVB COMPOU	composite	VVD	NEW Cr G daded sample (compos)	< 152 mm	
									LDD2 MAET Comp07			£:II = 4		< 132 IIIIII	
White perch			LPR3O-A	LPR3O-MA048	190	63			LPR3-MAFT-Comp07	LDD2 MANAGE Command	· · · · · ·	fillet			
White perch			LPR3O-A	LPR3O-MA049	88	29				LPR3-MAWB-Comp10	· ·	WB			
White perch			LPR3O-A	LPR3O-MA050	100	33			LPR3-MAFT-Comp08		composite	fillet			
White perch			LPR3O-A	LPR3O-MA052	156	52			LPR3-MAFT-Comp07		composite	fillet			
White perch	LPR3		LPR3O-A	LPR3O-MA053	82	27				LPR3-MAWB-Comp11	composite	WB	NEW CPG-added sample (Comp11)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA054	70	23	162	203		LPR3-MAWB-Comp11	composite	WB	NEW CPG-added sample (Comp11)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA055	80	27	173	203		LPR3-MAWB-Comp11	composite	WB	NEW CPG-added sample (Comp11)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA056	70	23	170	7							
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA057	82	27	178	S		LPR3-MAWB-Comp09	composite	WB	CPG added fish to sample to increase mass (Comp09)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA058	84	28	173	g		LPR3-MAWB-Comp09	composite	WB			
White perch			LPR3O-A	LPR3O-MA059	98	33		8	LPR3-MAFT-Comp08	·		fillet			
White perch			LPR3O-A	LPR3O-MA060	64	21			· ·	LPR3-MAWB-Comp12	composite	WB	NEW CPG-added sample (Comp12)		
White perch			LPR3O-A	LPR3O-MA061	80	27				LPR3-MAWB-Comp12		WB	NEW CPG-added sample (Comp12)		
White perch			LPR3O-A	LPR3O-MA062	98	33			LPR3-MAFT-Comp08	LI NO WINTER COMPTE	composite	fillet	NEW or a daded sample (comp12)		
			LPR3O-A	LPR3O-MA064	76	25			· · · · · · · · · · · · · · · · · · ·	LPR3-MAWB-Comp12	· · ·	WB	NEW CPG-added sample (Comp12)		
White perch				LPR3O-MA065		35				LFK3-IVIAVVB-COITIP12	· ·		NEW CFG-added sample (Comp12)		
White perch			LPR3O-A		106				LPR3-MAFT-Comp08	LDD2 MANA/D C42	composite	fillet	NEW CDC added as wells (Court 12)		
White perch			LPR3O-A	LPR3O-MA066	62	21				LPR3-MAWB-Comp12	composite	WB	NEW CPG-added sample (Comp12)		
White perch			LPR3O-A	LPR3O-MA067	84	28				LPR3-MAWB-Comp09	composite	WB			Eroded caudal fin, damaged left operculum
White perch			LPR3O-A	LPR3O-MA068	76	25				LPR3-MAWB-Comp11	composite	WB	NEW CPG-added sample (Comp11)		
White perch			LPR3O-A	LPR3O-MA069	70					LPR3-MAWB-Comp11	· ·	WB	NEW CPG-added sample (Comp11)		Erosion of caudal fin; hemorraging of ventral surface
White perch			LPR3O-A	LPR3O-MA070	110	37			LPR3-MAFT-Comp07		<u> </u>	fillet			
White perch	LPR3		LPR3O-A	LPR3O-MA071	62	21	. 158	207		LPR3-MAWB-Comp3		WB	NEW CPG-added sample (Comp30)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA072	60	20	162	207		LPR3-MAWB-Comp3	0 composite	WB	NEW CPG-added sample (Comp30)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA073	80	27	171	10		LPR3-MAWB-Comp10	composite	WB	CPG added fish to sample to increase mass (Comp10)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA074	100	33	188	8	LPR3-MAFT-Comp08		composite	fillet			
White perch			LPR3O-A	LPR3O-MA075	60	20				LPR3-MAWB-Comp3		WB	NEW CPG-added sample (Comp30)		Eroded caudal fin
White perch			LPR3O-A	LPR3O-MA076	65	22				LPR3-MAWB-Comp3	· ·	WB	NEW CPG-added sample (Comp30)		
White perch			LPR3O-A	LPR3O-MA077	70	23				LPR3-MAWB-Comp3			NEW CPG-added sample (Comp30)		
White perch			LPR3O-A	LPR3O-MA078	47	16				2. 1.5 1 1445 COMPS	20posice			< 152 mm	
			LPR3O-A			32				LPR3-MAWB-Comp10	composito	\A/D		132 11111	Left nectoral fin missing
White perch				LPR3O-MA079	95					· · · · · ·		WB	NEW CDC added cample (Com=20)		Left pectoral fin missing
White perch			LPR3O-A	LPR3O-MA080	57	19				LPR3-MAWB-Comp3		WB	NEW CPG-added sample (Comp30)		
White perch			LPR3O-A	LPR3O-MA081	85	28				LPR3-MAWB-Comp10		WB	CPG added fish to sample to increase mass (Comp10)		
White perch			LPR3O-A	LPR3O-MA082	62	21			LPR3-MAFT-Comp13			fillet	NEW CPG-added sample (Comp13)		
White perch			LPR3O-A	LPR3O-MA083	64	21			LPR3-MAFT-Comp13		· · · · · · · · · · · · · · · · · · ·	fillet	NEW CPG-added sample (Comp13)		
White perch			LPR3O-A	LPR3O-MA084	78	26			LPR3-MAFT-Comp13		composite	fillet	NEW CPG-added sample (Comp13)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA085	72	24	178	202	LPR3-MAFT-Comp13		composite	fillet	NEW CPG-added sample (Comp13)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA086	66	22	172	202	LPR3-MAFT-Comp13		composite	fillet	NEW CPG-added sample (Comp13)		
White perch	LPR3	LPR3O	LPR3O-A	LPR3O-MA102	68	23	166	202	LPR3-MAFT-Comp13		composite	fillet	NEW CPG-added sample (Comp13)		
White perch			LPR3O-A	LPR3O-MA103	92	31			LPR3-MAFT-Comp13			fillet	NEW CPG-added sample (Comp13)		Parasite attached
White perch			LPR4H-B	LPR4H-MA094	40	13					, , , , , , , , , , , , , , , , , , ,			< 152 mm	
White perch			LPR4H-A	LPR4H-MA107	40	1	. 70							< 152 mm	
			LPR4H-C	LPR4H-MA113	32	11								< 152 mm	
White perch	LF IV4	EC IVHIT	Li 11411-C	FL WHIT-IMMTT3	32	11	. 123	1						132 IIIII	

Table 2. Proposed white perch samples for analysis - REVISED

Table 2. Propose	d white per	ch samples	ior analysis -	KEVISED									
							EPA						
		Location			Weight 33% of	Length ref	erence Sample ID (tissue	Sample ID				Reason for exclusion from	
Species	Reach	ID	Trap ID	Specimen ID	(g) Wgt	(mm)	No. type 1)	(tissue type 2)	Sample Type	EPA sample	Notes	composite?	Specimen Comments
White perch	LPR4	LPR4I	LPR4I-C	LPR4I-MA116	1 0	43						< 152 mm	•
<u> </u>		LPR4L	LPR4L-A	LPR4L-MA215	58 19						insufficient mass from location	V 152 IIIII	
		LPR4P	LPR4P-A	LPR4P-MA193	84 28		12	LPR4-MAWB-Comp14	composite	WB	misumeteric mass irom rocation		
· · · · · · · · · · · · · · · · · · ·		LPR4P	LPR4P-A	LPR4P-MA199	190 63		12	LPR4-MAWB-Comp14	<u> </u>	WB			
		LPR4R	LPR4R-A	LPR4R-MA216	34 11		11	LPR4-MAWB-Comp15	<u> </u>	WB	sample includes fish < 152 mm	< 152 mm	
		LPR4R	LPR4R-A	LPR4R-MA217	56 19		11	LPR4-MAWB-Comp15	· · · · · · · · · · · · · · · · · · ·	WB	Sample includes fish < 152 film	V 152 IIIII	
		LPR4R	LPR4R-A	LPR4R-MA218	38 13		11	LPR4-MAWB-Comp15	<u> </u>	WB	sample includes fish < 152 mm	< 152 mm	
		LPR4R	LPR4R-A	LPR4R-MA219	48 16		11	LPR4-MAWB-Comp15	<u> </u>	WB	sample includes fish < 152 mm	< 152 mm	
		LPR4S	LPR4S-A	LPR4S-MA220	30 10		11	Li II III III Compis	composite	VVD	Sample includes fish < 152 film	< 152 mm	
<u> </u>		LPR4S	LPR4S-A	LPR4S-MA221	78 26		204 LPR4-MAFT-Comp16		composite	fillet	NEW CPG-added sample (Comp16)	× 152 mm	
· · · · · · · · · · · · · · · · · · ·		LPR4S	LPR4S-A	LPR4S-MA222	38 13		204 EFRA WINTER COMPTO		composite	IIIICC	NEW Cr G daded sample (compro)	< 152 mm	
<u> </u>		LPR4S	LPR4S-A	LPR4S-MA223	62 21		204 LPR4-MAFT-Comp16		composite	fillet	NEW CPG-added sample (Comp16)	132 11111	
		LPR4S	LPR4S-A	LPR4S-MA224	66 22		204 LPR4-MAFT-Comp16		<u> </u>	fillet	NEW CPG-added sample (Comp16)		
		LPR4S	LPR4S-A	LPR4S-MA265	182 61		204 LPR4-MAFT-Comp16		<u> </u>	fillet	NEW CPG-added sample (Comp16)		
· ·		LPR4S	LPR4S-A	LPR4S-MA266	74 25		204 LPR4-MAFT-Comp16		<u> </u>	fillet	NEW CPG-added sample (Comp16)		
<u> </u>		LPR4S	LPR4S-A	LPR4S-MA267	40 13		204 Li K4 Will I Compto		composite	Timee	NEW Cr G daded sample (compro)	< 152 mm	
		LPR4T	LPR4T-A	LPR4T-MA225	134 45		13 LPR4-MAFT-Comp17		composite	fillet		132 11111	
· · · · · · · · · · · · · · · · · · ·		LPR4T	LPR4T-A	LPR4T-MA226	36 12		15 Li K4 Will I Comp17		composite	IIIICC		< 152 mm	
<u> </u>		LPR4T	LPR4T-A	LPR4T-MA227	92 31		13 LPR4-MAFT-Comp17		composite	fillet		132 11111	
		LPR4T	LPR4T-A	LPR4T-MA228	46 15		13 LPR4-MAFT-Comp17		<u> </u>	fillet	CPG added fish to sample to increase mass (Comp17)		
<u> </u>		LPR4T	LPR4T-A	LPR4T-MA229	40 13		15 LI K4 WIAI T COMP17		composite	IIIICC	er a added fish to sumple to increase mass (company	< 152 mm	
· ·		LPR4T	LPR4T-A	LPR4T-MA230	52 17							sample not available	
<u> </u>		LPR4T	LPR4T-A	LPR4T-MA231	78 26		13 LPR4-MAFT-Comp17		composite	fillet	CPG added fish to sample to increase mass (Comp17)	Sample flot available	
		LPR4T	LPR4T-A	LPR4T-MA232	4 1		13 Li K4 Will I Comp17		composite	Timee	er e daded fish to sumple to intereuse mass (company	< 152 mm	
		LPR4T	LPR4T-A	LPR4T-MA249	1 0							< 152 mm	
		LPR4T	LPR4T-A	LPR4T-MA261	72 24		13 LPR4-MAFT-Comp17		composite	fillet		132 11111	
		LPR4T	LPR4T-A	LPR4T-MA262	88 29		13 LPR4-MAFT-Comp17			fillet			
		LPR4T	LPR4T-A	LPR4T-MA263	32 11		13 Li K4 Will I Comp17		composite	Timee		< 152 mm	
· ·		LPR4T	LPR4T-A	LPR4T-MA264	166 55		13 LPR4-MAFT-Comp17		composite	fillet		1252	
		LPR5A	LPR5A-A	LPR5A-MA117	0.5 0		13 Li K4 Will I Comp17		composite	Timee		< 152 mm	
		LPR5B	LPR5B-B	LPR5B-MA118	40 13							< 152 mm	
		LPR5E	LPR5E-A	LPR5E-MA197	60 20		14	LPR5-MAWB-Comp18	composite	WB	2 locations, adjacent	132	
<u> </u>		LPR5E	LPR5E-A	LPR5E-MA198	72 24		14	LPR5-MAWB-Comp18	· · · · · · · · · · · · · · · · · · ·	WB	2 locations, adjacent	Missing ri	pht evehall
		LPR5E	LPR5E-A	LPR5E-MA214	52 17		14	LPR5-MAWB-Comp18		WB	2 locations, adjacent		5 0 / 0.00
		LPR5E	LPR5E-A	LPR5E-MA259	74 25		14	LPR5-MAWB-Comp18	· · · · · · · · · · · · · · · · · · ·	WB	2 locations, adjacent		
		LPR5G	LPR5G-A	LPR5G-MA110	64 21						insufficient mass from location		
		LPR5I	LPR5I-A	LPR5I-MA195	62 21		205	LPR5-MAWB-Comp19	composite	WB	NEW CPG-added sample (Comp19)	Missing ri	ght eyeball
		LPR5I	LPR5I-A	LPR5I-MA196	66 22							< 152 mm Caudal fin	
		LPR5I	LPR5I-A	LPR5I-MA200	64 21	165	205	LPR5-MAWB-Comp19	composite	WB	NEW CPG-added sample (Comp19)	Missing le	ft eyeball
		LPR5I	LPR5I-A	LPR5I-MA269	72 24	172	205	LPR5-MAWB-Comp19	<u> </u>	WB	NEW CPG-added sample (Comp19)		,
		LPR5J	LPR5J-A	LPR5J-MA112	44 15							< 152 mm	
	LPR5	LPR5K	LPR5K-B	LPR5K-MA115	4 1	61						< 152 mm	
	LPR5	LPR5L	LPR5L-B	LPR5L-MA114	30 10	130						< 152 mm	
<u> </u>		LPR5M	LPR5M-C	LPR5M-MA111	38 13	136						< 152 mm	
		LPR50	LPR5O-B	LPR5O-MA119	40 13							< 152 mm	
		LPR5Q	LPR5Q-A	LPR5Q-MA250	36 12							< 152 mm	
		LPR5Q	LPR5Q-A	LPR5Q-MA251	41 14							< 152 mm	
White perch	LPR5	LPR5Q	LPR5Q-A	LPR5Q-MA252	36 12	139						< 152 mm	
		LPR5R	LPR5R-A	LPR5R-MA201	294 98		15 LPR5-MAFT-Comp20		composite	fillet			
		LPR5R	LPR5R-A	LPR5R-MA202	138 46	203	107 LPR5-MAFT-Comp21			fillet	**EPA added sample 6/7/10 (Comp 21)		
	LPR5	LPR5R	LPR5R-A	LPR5R-MA203	130 43	196	107 LPR5-MAFT-Comp21			fillet	**EPA added sample 6/7/10 (Comp 21)		
		LPR5R	LPR5R-A	LPR5R-MA204	58 19	161	107 LPR5-MAFT-Comp21			fillet	**EPA added sample 6/7/10 (Comp 21)		
		LPR5R	LPR5R-A	LPR5R-MA205	48 16	154	107 LPR5-MAFT-Comp21			fillet	**EPA added sample 6/7/10 (Comp 21)		
		LPR5R	LPR5R-A	LPR5R-MA206	62 21		107 LPR5-MAFT-Comp21			fillet	**EPA added sample 6/7/10 (Comp 21)		
· · · · · · · · · · · · · · · · · · ·		LPR5R	LPR5R-A	LPR5R-MA207	80 27		107 LPR5-MAFT-Comp21			fillet	**EPA added sample 6/7/10 (Comp 21)		
		LPR5R	LPR5R-A	LPR5R-MA208	32 11							< 152 mm	
		LPR5R	LPR5R-A	LPR5R-MA209	44 15							< 152 mm	
		LPR5R	LPR5R-A	LPR5R-MA210	28 9							< 152 mm	
White perch	LPR5	LPR5R	LPR5R-A	LPR5R-MA253	56 19	159	107 LPR5-MAFT-Comp21		composite	fillet	**EPA added sample 6/7/10 (Comp 21)		
		LPR5R	LPR5R-A	LPR5R-MA254	124 41		107 LPR5-MAFT-Comp21		· · · · · · · · · · · · · · · · · · ·	fillet	**EPA added sample 6/7/10 (Comp 21)		
		LPR5R	LPR5R-A	LPR5R-MA255	41 14	147						< 152 mm	
		LPR5R	LPR5R-A	LPR5R-MA256	144 48		15 LPR5-MAFT-Comp20		composite	fillet			
		LPR5R	LPR5R-A	LPR5R-MA257	78 26		15 LPR5-MAFT-Comp20		· · · · · · · · · · · · · · · · · · ·	fillet			
		LPR5R	LPR5R-A	LPR5R-MA258	26 9							< 152 mm	
		LPR5S	LPR5S-A	LPR5S-MA211	132 44	217	14	LPR5-MAWB-Comp18	composite	WB	2 locations, adjacent		
	LPR5	LPR5S	LPR5S-A	LPR5S-MA212	36 12							< 152 mm	
· ·							·	·			·		

Table 2. Proposed white perch samples for analysis - REVISED

	u titilite per		tor analysis - i	TE VIOLD										
		Location			Weight	33% of	_	EPA Sample ID (tissue					Reason for exclusion from	
Species	Reach	ID	Trap ID	Specimen ID	(g)	Wgt	(mm)	No. type 1)	(tissue type 2)	Sample Type	EPA sample	Notes	composite?	Specimen Comments
· · · · · · · · · · · · · · · · · · ·			LPR5S-A	LPR5S-MA213	32	11	135						< 152 mm	
•			LPR5S-A LPR5T-A	LPR5S-MA260 LPR5T-MA233	46 72	15 24	145 164	16 LPR5-MAFT-Comp22		composite	fillet		< 152 mm	
<u> </u>			LPR5T-A	LPR5T-MA234	80	27	179	16 LPR5-MAFT-Comp22		composite	fillet			
<u> </u>			LPR5T-A	LPR5T-MA235	42	14	133	17	LPR5-MAWB-Comp23	composite	WB	sample includes fish < 152 mm	< 152 mm	
	LPR5	LPR5T	LPR5T-A	LPR5T-MA236	28	9	129	17	LPR5-MAWB-Comp23	composite	WB	sample includes fish < 152 mm	< 152 mm	
<u> </u>			LPR5T-A	LPR5T-MA237	46	15	136	16 LPR5-MAFT-Comp22		composite	fillet	sample includes fish < 152 mm	< 152 mm	
· · · · · · · · · · · · · · · · · · ·			LPR5T-A	LPR5T-MA238	32	11	131	17	LPR5-MAWB-Comp23	composite	WB	sample includes fish < 152 mm	< 152 mm	
			LPR5T-A LPR5T-A	LPR5T-MA239 LPR5T-MA240	70	23	155 128	16 LPR5-MAFT-Comp22	LDDE MANAD Comp 22	composite	fillet WB	cample includes fish < 152 mm	4 152 mm	
			LPR5T-A	LPR5T-MA241	40	13	135	16 LPR5-MAFT-Comp22	LPR5-MAWB-Comp23	composite	fillet	sample includes fish < 152 mm sample includes fish < 152 mm	< 152 mm	
			LPR5T-A	LPR5T-MA242	36	12	131	17	LPR5-MAWB-Comp23	composite	WB	sample includes fish < 152 mm	< 152 mm	
•			LPR5T-A	LPR5T-MA243	32	11	136	17	LPR5-MAWB-Comp23	composite	WB	sample includes fish < 152 mm	< 152 mm	
White perch	LPR5	LPR5T	LPR5T-A	LPR5T-MA244	54	18	147	16 LPR5-MAFT-Comp22		composite	fillet	sample includes fish < 152 mm	< 152 mm	
· · · · · · · · · · · · · · · · · · ·			LPR5T-A	LPR5T-MA245	28	9	123	17	LPR5-MAWB-Comp23	composite	WB	sample includes fish < 152 mm	< 152 mm	
· · · · · · · · · · · · · · · · · · ·			LPR5T-A	LPR5T-MA246	48	16	137	16 LPR5-MAFT-Comp22	LDDE MANAGE Command	composite	fillet	sample includes fish < 152 mm	< 152 mm	
· · · · · · · · · · · · · · · · · · ·			LPR5T-A LPR5T-A	LPR5T-MA248	30	10 12	118 136	17 16 LDDE MAET Comp22	LPR5-MAWB-Comp23	composite	WB fillet	sample includes fish < 152 mm sample includes fish < 152 mm	< 152 mm	
<u> </u>			LPR6G-C	LPR6G-MA129	44	15	144	16 LPR5-MAFT-Comp22		composite	illet	sample includes fish < 152 film	< 152 mm	
<u> </u>			LPR6H-B	LPR6H-MA194	30	10	135						< 152 mm	
•	LPR6	LPR6H	LPR6H-A	LPR6H-MA268	58	19	165					insufficient mass from location		
White perch	LPR6	LPR6I	LPR6I-B	LPR6I-MA134	34	11	138						< 152 mm	
· · · · · · · · · · · · · · · · · · ·			LPR6L-A	LPR6L-MA122	630	210	315	18 LPR6-MAFT-Ind122		individual	fillet			
· · · · · · · · · · · · · · · · · · ·			LPR6N-A	LPR6N-MA120	206	69	242	20 LPR6-MAFT-Comp24		composite	fillet	2 locations; ~0.5 mile apart		
			LPR6N-A LPR6Q-A	LPR6N-MA131 LPR6Q-MA124	76 52	25 17	180 153							
<u> </u>			LPR6Q-A	LPR6Q-MA128	136	45	216	19	LPR6-MAWB-Ind128	individual	WB			
			LPR6R-A	LPR6R-MA121	258	86	260	20 LPR6-MAFT-Comp24	EI NO WINCOUD III GIZO	composite	fillet	2 locations; ~0.5 mile apart		
	LPR6		LPR6R-C	LPR6R-MA125	78	26	181					,		
White perch	LPR6	LPR6V	LPR6V-A	LPR6V-MA130	44	15	147						< 152 mm	
			LPR7G-B	LPR7G-MA133	36	12	140						< 152 mm	
			LPR7G-B	LPR7G-MA135	28	9	126	24	LDD7 MANAD Comman		14/D	2 la satisma a disassat	< 152 mm	
			LPR7J-C LPR7J-B	LPR7J-MA127 LPR7J-MA137	70 54	23 18	170 159	21	LPR7-MAWB-Comp25	composite	WB WB	2 locations, adjacent 2 locations, adjacent		
•			LPR7K-A	LPR7K-MA136	32	11	127	21	LFR7-WAVVB-Comp23	composite	WB	2 locations, adjacent	< 152 mm	
<u> </u>			LPR7N-B	LPR7N-MA126	52	17	156	21	LPR7-MAWB-Comp25	composite	WB	2 locations, adjacent		
White perch	LPR7	LPR7Q	LPR7Q-C	LPR7Q-MA123	202	67	236	22	LPR7-MAWB-Ind123	individual	WB			
· · · · · · · · · · · · · · · · · · ·			LPR7Q-A	LPR7Q-MA132	44	15	150						< 152 mm	
· · · · · · · · · · · · · · · · · · ·			LPR8U-A	LPR8U-MA168	130	43	215	208 LPR8-MAFT-Comp31		composite	fillet	NEW CPG-added sample (Comp31)		
White perch	LPR8		LPR8U-A LPR8U-A	LPR8U-MA169 LPR8U-MA170	52 44	17 15	155 143	208 LPR8-MAFT-Comp31		composite	fillet	NEW CPG-added sample (Comp31)	< 152 mm	
White perch White perch			LPR8U-A	LPR8U-MA171	82	27	180	208 LPR8-MAFT-Comp31		composite	fillet	NEW CPG-added sample (Comp31)	< 132 IIIIII	
<u> </u>			LPR8U-A	LPR8U-MA172	38	13	139	200 21 110 1111 11 2011, p3 1		Composite	·····ct	new or o daded sample (compos)	< 152 mm	
	LPR8		LPR8U-A	LPR8U-MA173	159	53	249	208 LPR8-MAFT-Comp31		composite	fillet	NEW CPG-added sample (Comp31)		
			LPR8V-A	LPR8V-MA165	54	18	159	209	LPR8-MAWB-Comp32	composite	WB	NEW CPG-added sample (Comp32)		
			LPR8V-A	LPR8V-MA167	128	43	212	23 LPR8-MAFT-Comp26	LDDQ MANAGE C	composite	fillet	NEW CDC - I I - I		
· · · · · · · · · · · · · · · · · · ·			LPR8V-A LPR8V-A	LPR8V-MA174	58	19 24	162 176	209	LPR8-MAWB-Comp32	composite	WB	NEW CPG-added sample (Comp32)		
			LPR8V-A LPR8V-A	LPR8V-MA175 LPR8V-MA176	72 92	31	187	24 LPR8-MAFT-Comp27 23 LPR8-MAFT-Comp26		composite	fillet			
			LPR8V-A	LPR8V-MA177	80	27	180	24 LPR8-MAFT-Comp27		composite	fillet			
<u> </u>			LPR8V-A	LPR8V-MA178	70	23	182	24 LPR8-MAFT-Comp27		composite	fillet			
	LPR8	LPR8V	LPR8V-A	LPR8V-MA179	80	27	185	23 LPR8-MAFT-Comp26		composite	fillet			
· · · · · · · · · · · · · · · · · · ·			LPR8V-A	LPR8V-MA180	52	17	164	25	LPR8-MAWB-Comp28	composite	WB			
· · · · · · · · · · · · · · · · · · ·			LPR8V-A	LPR8V-MA181	82	27	179	24 LPR8-MAFT-Comp27	LDDQ MANAGE C	composite				
· · · · · · · · · · · · · · · · · · ·			LPR8V-A LPR8V-A	LPR8V-MA182 LPR8V-MA183	60 86	20 29	169 187	25 LPR8-MAFT-Comp26	LPR8-MAWB-Comp28	composite				
			LPR8V-A	LPR8V-MA184	60	29	167	25 LPR6-IVIAFT-COMP26	LPR8-MAWB-Comp28	composite	WB			
<u> </u>			LPR8V-A	LPR8V-MA185	86	29	187	23 LPR8-MAFT-Comp26		<u> </u>	fillet			
<u> </u>			LPR8V-A	LPR8V-MA186	62	21	173	26	LPR8-MAWB-Comp29	composite	WB			
	LPR8	LPR8V	LPR8V-A	LPR8V-MA187	70	23	175	24 LPR8-MAFT-Comp27		composite	fillet			
· · · · · · · · · · · · · · · · · · ·			LPR8V-A	LPR8V-MA188	70	23	175	24 LPR8-MAFT-Comp27		composite				
			LPR8V-A	LPR8V-MA189	70	23	175	26	LPR8-MAWB-Comp29	composite	WB		4152	
· · · · · · · · · · · · · · · · · · ·			LPR8V-A LPR8V-A	LPR8V-MA190 LPR8V-MA191	42 66	14 22	149 175	26	LPR8-MAWB-Comp29	composite	WR		< 152 mm	
<u> </u>			LPR8V-A LPR8V-A	LPR8V-MA191	52	17	162	209	LPR8-MAWB-Comp32	composite		NEW CPG-added sample (Comp32)		
<u> </u>			LPR8X-A	LPR8X-MA166	82	27	182			coposite		insufficient mass from location		
•									-	_		•		

Species	Summary of Proposed Fish Plans	USEPA Sample Type (Composite or Individual)	USEPA Proposed Sampling Scheme and Associated Sample ID Numbers	Weight (grams)	Length (mm)	Human Health Sample	Ecological Sample	Comments
White Perch	USEPA & Partner Agency	Individual	LPR1G-MA138	220	255		whole body	
2	Agree USEPA & Partner Agency	Composite	LPR1J-MA139+LPR1J-MA140+LRP1J-MA141	148+142+128=418	218 & 197 & 205	fillet		tight on mass (mass=418 g) but also in CPG plan
3	Agree USEPA & Partner Agency Agree	Individual	LPR1J-MA145	544	321	fillet	offal	F/C; only one of this type of sample
101	New comp	Composite	LPR1P-MA154 + LPR1Q-MA147 + LPR1Q-MA150 + LPR1Q-MA153 + LPR1Q-MA155	4+1+5+6+0.9		fillet (fish too small)		too small
4	USEPA & Partner Agency Agree	Individual	LPR2H-MA158	272	262		whole body	
102	New comp	Composite	LPR2C-MA149 + LPR2C-MA151 + LPR2C-MA163 + LPR2C-MA164 + LPR2E-MA142 + LPR2E+MA159	0.7+2+1+1+0.5+6		fillet (fish too small)		too small; LPR2E (108 and 125) per e-mail don't exist, assume LPR2E (142 and 159) are intended fish
103	New comp	Composite	LPR2O (143, 144, 146, 148, 152, 156, 160, 162)	1.5+3+0.2+1+0.5+1.1 +0.7+1.5		fillet (fish too small)		too small
106	New comp	Composite	LPR3A (018, 091, 093, 104, 105, 106)	4+1+1+4+4+4		fillet (fish too		
5	USEPA & Partner Agency Agree	Composite	LPR3M-MA011 + LPR3M-MA012 + LPR3M-MA014 + LPR3M-MA017 + LPR3M-MA025 + LPR3M-MA027+ LPR3M-MA030	62+62+66+98+ 58+62+60=468	158 & 160 & 160 & 182 & 163 & 171 &	small) fillet		too small
6	USEPA & Partner Agency	Composite	LPR3M-MA032+LPR3M-MA037+LPR3M-MA029+LPR3M MA028+LPR3M-MA031	108+92+86+78+76=4 40	162 186 & 198 & 184 & 177 & 177	fillet		CPG comp LPR3-MAFT04 CPG comp LPR3-MAFT05
105	Agree New comp	Composite	LPR3G (007, 009, 010, 034, 035, 036)	88+58+58+110+56+7		fillet		
104	New comp	Composite		6=446 54, 84, 66, 78, 56,				shown as LPR2C in e-mail, matches CPG LPR3G comp LPR3-MAFT03
104		Composite	LPR3N (041, 092, 095, 096, 097, 098)	78=416		fillet		matches CPG LPR3N comp LPR3-MAFT06
7	USEPA & Partner Agency Agree	Composite	LPR3O-MA048 + LPR3O-MA070 + LPR3O-MA052	190+110+156 =456	226 & 192 & 211	fillet		
8	USEPA & Partner Agency	Composite	LPR3O-MA050 + LPR3O-MA065 + LPR3O-MA074 +LPR3O-MA062 + LPR3O-MA059	100+106+100+ 98+98=502	187 & 190 & 188 & 188 & 180	fillet		
9	Agree USEPA & Partner Agency Agree	Composite	LPR3O-MA058 + LPR3O-MA067 + LPR3O-MA057	84+84=168; +82=250	173 & 182 <mark>&178</mark>		whole body	Add 1 fish to increase mass
10	USEPA & Partner Agency Agree	Composite	LPR3O-MA079 + LPR3O-MA049 + LPR3O-MA081 + LPR3O-MA073	95+88=183 +80+85=348	182 & 170 <mark>&171 &</mark> 177		whole body	Add 2 fish to increase mass
201	added 6/8	Composite	LPR3O (MA001, 002, 003, 004)	56+82+76+58=272		1	whole body	CPG comp LPR3-MAWB01
202	added 6/8	Composite	LPR3O (MA082, 083, 084, 085, 086, 102, 103)	62+64+78+7266+68+		fillet		CPG comp LPR3-MAFT11
203	added 6/8	Composite	LPR3O (MA053, 054, 055, 068, 069)	92=502 82+70+80+76+70=37 8			whole body	
206 207	added 6/8 added 6/8	Composite Composite	LPR3O (MA060, 061, 064, 066) LPR3O (MA071, 072, 075, 076, 077, 080)	64+80+76+62=282 62+60+60+65+70+57 = 374	161&180&175&162 158 & 162 & 169 & 159 & 171 & 159		whole body whole body	
11	USEPA & Partner Agency	Composite	LPR4R-MA216 + LPR4R-MA217 + LPR4R-MA218 + LPR4R-MA-219	34+56+38+48=176	134 & 155 & 138 & 150		whole body	
12	Agree USEPA & Partner Agency	Composite	LPR4P-MA193 + LPR4P-MA199	84+190=274	183 & 224		whole body	CPG comp LPR4-MAWB03
204	Agree added 6/8	Composite	LPR4S (221, 223, 224, 265, 266)	78+62+66+182+74=4		fillet		CPG comp LPR4-MAFT12
13	USEPA &	Composite	LPR4T-MA225 + LPR 4T-MA227 + LPR4T-MA261 +	62 134+92+72+66+88=4	209 & 183 & 175 &	fillet		
	Partner Agency Agree	·	LPR4T-MA264 + LPR4T-MA262 add LPR4T-MA228 and MA231	52; +46+78=676	227 & 182 &	inet		Add 2 fish to increase mass
14	USEPA & Partner Agency Agree	Composite	LPR5E-MA197 + LPR5E-MA198 + LPR5E-MA214 + LPR5E-MA259 + LPR5S-MA211	60+72+52+74+132=3 90			whole body	CPG comp LPR5-MAWB04
15	USEPA & Partner Agency	Composite	LPR5R-MA201 + LPR5R-MA256 + LPR5R-MA257	294+144+78 =516	240 & 220 & 178	fillet		CPG comp LPR5-MAFT14
107	Agree New comp	Composite	LPR5R (202, 203, 204, 205, 206, 207, 253, 254)	138+130+58+48+62+		fillet		
16	USEPA &	Composite	LPR5T-MA233 + LPR5T-MA234 + LPR5T-MA237 + LPR5T	80+56+124=696 72+80+46+70+	164 & 179 & 136 &	fillet		matches CPG comp LPR5-MAFT15 from LPR5R; corrected weight of 696g <6 inches
	Partner Agency Agree	Composito	MA239 + LPR5T-MA241 + LPR5T-MA244 + LPR5T- MA246 + LPR5T-MA247	40+54+48+36 =446	155 & 135 & 147 & 137 & 136	met		No nicites
17	USEPA & Partner Agency Agree	Composite	LPR5T-MA235 + LPR5T-MA236 + LPR5T-MA238 + LPR5T-MA 240 + LPR5T-MA242 + LPR5T-MA243 + LPR5T-MA245 + LPR5T-MA248	42+28+32+28+36+32 +28+30=256	133 & 129 & 131 & 128 & 131 & 136 &		whole body	< 6 inches but for ERA
				.20.00=200	128 & 131 & 136 & 123 & 118	<u></u>		

Species	Summary of	USEPA Sample Type	USEPA Proposed Sampling Scheme	Weight	Length	Human Health	Ecological	Comments
	Proposed Fish Plans	(Composite or Individual)	and Associated Sample ID Numbers	(grams)	(mm)	Sample	Sample	
205	added 6/8	Composite	LPR5I (195, 200, 269)	62+64+72=264			whole body	CPG LPR5-MAWB05
18	USEPA & Partner Agency Agree	Individual	LPR6L-MA122	639	315	fillet		
19	USEPA & Partner Agency Agree	Individual	LPR6Q-MA128	136	216		whole body	
20	USEPA & Partner Agency Agree	Composite	LPR6N-MA120 + LPR6R-MA121	206+258=464	260 & 242	fillet		
21	USEPA & Partner Agency Agree	Composite	LPR7J-MA137 + LPR7J-MA127 + LPR7N-MA126	54+70+52=176	159 & 170 & 156		whole body	CPG comp LPR7-MAWB07
22	USEPA & Partner Agency Agree	Individual	LPR7Q-MA123	202	236		whole body	
208	added 6/8	Composite		130+52+82+159=423	215 & 155 & 180 & 249	fillet		
209	added 6/8	Composite	LPR8V (MA165, 174, 192)	54+58+52=164	159 & 162 & 162		whole body	
23	USEPA & Partner Agency Agree	Composite	LPR8V-MA167 + LPR8V-MA176 + LPR8V-MA179 + LPR8V-MA183 + LPR8V-MA185	128+92+80+86+86=4 72	212 & 187 & 185 & 187 & 187	fillet		CPG comp (except include addtl fish MA165) LPR8-MAFT19
24	USEPA & Partner Agency Agree	Composite	LPR8V-MA175 + LPR8V-MA177 + LPR8V-MA178 + LPR8V-MA181 + LPR8V-MA187 + LPR8V-MA188	72+80+70+82+ 70+70=444	176 & 180 & 182 & 179 & 175 & 175	fillet		CPG comp (except include addtl fish MA 174) LPR6-MAFT20
25	USEPA & Partner Agency Agree	Composite	LPR8V-MA-180 + LPR8V-MA182 + LPR8V-MA184	52+60+60=172	164 & 169 & 167		whole body	
26	USEPA & Partner Agency Agree	Composite	LPR8V-MA189 + LPR8V-MA191 + LPR8V-MA186	70+66+62=198	175 & 175 & 173		whole body	

Table 1. Summar	y of propo	sed American eel s	amples - REVISED			Estima	ted Mass	1	ı	Comp	oosite	lengtl	n for American eel (mm)
								Whole body				- 0-	Size class and length range
Species	Reach	RM	Location (s)	Sample ID (tissue type 1)	Sample ID (tissue type 2)	Fillet (g)	Carcass (g)	mass (g)	n	ave	min	max	(See Notes)
American eel	1	RM 0 - RM 2	LPR1G	LPR1-ARFT-Comp01		254			2	565	550	580	С
American eel	1	RM 0 - RM 2	LPR1G	LPR1-ARFT-Comp02		213			2	525	520	529	В
American eel	1	RM 0 - RM 2	LPR1G	LPR1-ARFT-Ind085	LPR1-ARCT-Ind085	151	301		1	575	575	575	С
American eel	1	RM 0 - RM 2	LPR1Q		LPR1-ARWB-Comp03			170	3	340	287	392	A
American eel	2	RM 2 - RM 4	LPR2F/LPR2G/LPR2N ^a	LPR2-ARFT-Comp04	LPR2-ARCT-Comp04	199	401		3	459	400	508	В
American eel	3	RM 4 - RM 6	LPR3L	LPR3-ARFT-Comp05		217			2	523	520	525	В
American eel	3	RM 4 - RM 6	LPR3Q	LPR3-ARFT-Comp06		195			2	475	450	500	В
	_												_
American eel	3	RM 4 - RM 6	LPR3L	LPR3-ARFT-Ind010		163			1	620	620	620	С
American eel	3	RM 4 - RM 6	LPR3P	LPR3-ARFT-Ind014		283			1	750	750	750	D
American eel	3	RM 4 - RM 6	LPR3Q	LPR3-ARFT-Ind005		146			1	600	600	600	С
American eel	3	RM 4 - RM 6	LPR3P		LPR3-ARWB-Ind001			375	1	551	551	551	С
American eel	3	RM 4 - RM 6	LPR3Q		LPR3-ARWB-Ind012	-		420	1	635	635	635	D
American eel	3	RM 4 - RM 6 RM 4 - RM 6	LPR3L LPR3P	LPR3-ARFT-Comp20	LPR3-ARWB-Ind009	138		285	2	480 450	480 400	480 500	B B
American eel American eel	4	RM 6 - RM 8	LPR4F	LPR4-ARFT-Ind022		205			1	662	662	662	D D
American eel	4	RM 6 - RM 8	LPR4M	LPR4-ARFT-Ind022		219			1	680	680	680	D
	4					277			2		561		C
American eel		RM 6 - RM 8	LPR4M/4N ^D	LPR4-ARFT-Comp07						586			-
American eel American eel	4	RM 6 - RM 8 RM 6 - RM 8	LPR4N LPR4Q	LPR4-ARFT-Ind034 LPR4-ARFT-Ind026		207			1	463 650	463 650	463 650	B D
	4	RM 6 - RM 8	LPR4Q	LPR4-ARFT-Ind026		203			1	652	652	652	D
American eel American eel	4	RM 6 - RM 8	LPR4N	LPR4-ARF1-INUU44	LPR4-ARWB-Ind024	222		318	1	511	511		В
American eel	4	RM 6 - RM 8	LPR4N	 	LPR4-ARWB-Ind060			352	1	550	550		C
American eel	4	RM 6 - RM 8	LPR4Q	 	LPR4-ARWB-Ind005			422	1	603	603	603	С
American eel	4	RM 6 - RM 8	LPR4Q		LPR4-ARWB-Ind043			366	1	561	561	561	C
American eel	4	RM 6 - RM 8	LPR4M	LPR4-ARFT-Comp08	EFR4-ARWB-IIIG043	156		300	2	481	480	482	В
American eel	5	RM 8 - RM 10	LPR5F	LPR5-ARFT-Comp09		214			2	527	490	564	C
American eel	5	RM 8 - RM 10	LPR5H	LPR5-ARFT-Comp10		163			2	467	460	473	В
American eel	5	RM 8 - RM 10	LPR5F	LPR5-ARFT-Ind021		173			1	578	578	578	C
American eel	5	RM 8 - RM 10	LPR5F	LPR5-ARFT-Ind048		181			1	615	615	615	C
American eel	5	RM 8 - RM 10	LPR5F	LPR5-ARFT-Ind049		213			1	675	675	675	D
American eel	5	RM 8 - RM 10	LPR5H	LPR5-ARFT-Ind030		175			1	592	592	592	С
American eel	5	RM 8 - RM 10	LPR5J	LPR5-ARFT-Ind040		169			1	610	610	610	С
American eel	5	RM 8 - RM 10	LPR5H		LPR5-ARWB-Ind062			390	1	560	560	560	С
American eel	5	RM 8 - RM 10	LPR5J		LPR5-ARWB-Ind039			370	1	550	550	550	С
American eel	5	RM 8 - RM 10	LPR5A		LPR5-ARWB-Comp11 ^e			162	3	295	270	314	A
American eel	5	RM 8 - RM 10	LPR5M	LPR5-ARFT-Ind086	·	147			1	570	570	570	С
American eel	5	RM 8 - RM 10	LPR5H	LPR5-ARFT-Comp12		154			2	478	475	480	В
American eel	6	RM 10 - RM 12	LPR6O	LPR6-ARFT-Ind073		259			1	741	741	741	D
American eel	6	RM 10 - RM 12	LPR6P	LPR6-ARFT-Ind065		193			1	590	590	590	С
American eel	6	RM 10 - RM 12	LPR6O		LPR6-ARWB-Ind069			214	1	449	449	449	В
American eel	6	RM 10 - RM 12	LPR6R		LPR6-ARWB-Ind074			258	1	481	481	481	В
American eel	7	RM 10 - RM 12	LPR7O	LPR7-ARFT-Ind071		200			1	624	624	624	D
American eel	7	RM 12 - RM 14	LPR7H		LPR7-ARWB-Ind070			126	1	373	373	373	A
American eel	8	RM 8 - RM 10	LPR8U		LPR8-ARWB-Comp13 ^e			176	5	284	264	310	A
American eel	8	RM 14 - RM 17.4	LPR8V/LPR8Y/LPR8Z ^c	LPR8-ARFT-Comp14		164			6	335	308	396	Α
American eel	8	RM 14 - RM 17.4	LPR8V		LPR8-ARWB-Comp15 ^e			162	4	275	268	282	Α
American eel	8	RM 14 - RM 17.4	LPR8X		LPR8-ARWB-Comp16 ^e			152	4	275	268	282	Α
American eel	8	RM 14 - RM 17.4	LPR8Y/LPR8Z ^d	LPR8-ARFT-Comp17 ^e		156			9	303	278	330	A
	8	RM 14 - RM 17.4	LPR8Y	E. N. O. Alli T. Collip 17	LPR8-ARWB-Comp18 ^e	130		178	4	280	271	288	A
American eel									-		_		
American eel	8	RM 14 - RM 17.4	LPR8Z	LDDG ADET Comman	LPR8-ARWB-Comp19 ^e	422		190	4	286	274	294	A
American eel	8	RM 14 - RM 17.4	LPR8Z	LPR8-ARFT-Comp21	 	133			10	285.6	279	293	А
American eel	8	RM 14 - RM 17.4	LPR8Z	LPR8-ARFT-Comp22 ^e	1	133	l		11	274.727	261	284	Α

Notes:

Shaded cells indicate the samples targeted for QC analysis

Size Class Definitions A = <400 mm B = 400-525 mm

C = 526-620 mm

D = >620 mm

HH samples

Size class	Ind. Fillet	Comp. Fillet	Total
Α	0	4	4
В	1	8	9
С	9	3	12
D	8	0	8
			33

Eco samples

Size class	WB	Offal	Total
Α	8	0	8
В	4	1	5
С	6	1	7
D	1	0	1
			21

 $^{^{\}rm a}$ LPR2F and LPR2N are on opposite sides of the river at the same RM; LPR2G is within $^{\sim}$ 0.5 miles of LPR2F and LPR2N

^b Locations are approximately 0.6 miles apart

^c LPR8Y and LPR8Z are within approximately 0.4 miles of eachother; LPR8V and LPR8Y are just over 1 mile from eachother and LPR8V and LPR8Z are ~1.5 miles

^d LPR8Y and LPR8Z are within approximately 0.4 miles of eachother

e Includes fish < 279 mm (and > 254 mm)

Table 2. P	roposed cor	mposite sampl	les for American e	el - REVISED										
	Location		Collection		Weight		Length	EPA	Sample ID (tissue type				Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
LPR1	LPR1G	LPR1G-A	Trotline	LPR1G-AR075	364	121	550	1	LPR1-ARFT-Comp01		fillet			
LPR1	LPR1G	LPR1G-A	Trotline	LPR1G-AR077	312	104	520	3	LPR1-ARFT-Comp02		fillet			
LPR1	LPR1G	LPR1G-C	Trotline	LPR1G-AR080	400	133	580		LPR1-ARFT-Comp01		fillet			
LPR1	LPR1G	LPR1G-A	Trotline	LPR1G-AR085	452	151	575	2	LPR1-ARFT-Ind085	LPR1-ARCT-Ind085	fillet/WB			
LPR1	LPR1G	LPR1G-A	Trotline	LPR1G-AR646	326	109	529	3	LPR1-ARFT-Comp02		fillet			
LPR1	LPR1Q	LPR1Q-A	Eel Trap	LPR1Q-AR081	64	21	392	4		LPR1-ARWB-Comp03	WB			
LPR1	LPR1Q	LPR1Q-A	Eel Trap	LPR1Q-AR082	46	15	287	4		LPR1-ARWB-Comp03	WB			
LPR1	LPR1Q	LPR1Q-A	Eel Trap	LPR1Q-AR083	60	20	340	4		LPR1-ARWB-Comp03	WB			
LPR2	LPR2E	LPR2E-C	Minnow Trap	LPR2E-AR076	18	6	237			El III / III VIII Compos	WD		< 279 mm	
LPR2	LPR2F	LPR2F-A	Trotline	LPR2F-AR084	118	39	400		LPR2-ARFT-Comp04	LPR2-ARCT-Comp04	fillet/WB	3 locations: 2F. N adjacent, 2G 0.5 mile away	(27511111	
LPR2	LPR2G	LPR2G-A	Trotline	LPR2G-AR079	232	77	470		LPR2-ARFT-Comp04	LPR2-ARCT-Comp04	fillet/WB	3 locations; 2F, N adjacent, 2G 0.5 mile away		
LPR2	LPR2N	LPR2U-A	Crab Trap	LPR2N-AR078	250	83	508		LPR2-ARFT-Comp04	LPR2-ARCT-Comp04	fillet/WB	3 locations; 2F, N adjacent, 2G 0.5 mile away		
									LFRZ-ARFT-Compos	LFR2-ARC1-Compos	Illiet/WB	3 locations, 2F, N aujacent, 2G 0.5 lille away		
LPR3	LPR3B	LPR3B-B	Minnow Trap	LPR3B-AR019	40	13	250						< 279 mm	
LPR3	LPR3F	LPR3F-C	Crab Trap	LPR3F-AR015	128	43	426							
LPR3	LPR3F	LPR3F-C	Crab Trap	LPR3F-AR016	70	23	320							
LPR3	LPR3I	LPR3I-A	Eel Trap	LPR3I-AR011	16	5	216						< 279 mm	
LPR3	LPR3L	LPR3L-A	Trotline	LPR3L-AR006	360	120	520		LPR3-ARFT-Comp05		fillet			
LPR3	LPR3L	LPR3L-B	Trotline	LPR3L-AR007	290	97	525		LPR3-ARFT-Comp05		fillet			
LPR3	LPR3L	LPR3L-B	Trotline	LPR3L-AR008	152	51	415							
LPR3	LPR3L	LPR3L-C	Trotline	LPR3L-AR009	285	95	480			LPR3-ARWB-Ind009	WB			
LPR3	LPR3L	LPR3L-C	Trotline	LPR3L-AR010	490	163	620	7	LPR3-ARFT-Ind010		fillet			
LPR3	LPR3P	LPR3P-B	Trotline	LPR3P-AR001	375	125	551	8		LPR3-ARWB-Ind001	WB			
LPR3	LPR3P	LPR3P-C	Trotline	LPR3P-AR002	255	85	500	201	LPR3-ARFT-Comp20		fillet	CPG added sample (Comp20)		
LPR3	LPR3P	LPR3P-C	Trotline	LPR3P-AR003	159	53	400	201	LPR3-ARFT-Comp20		fillet	CPG added sample (Comp20)		
LPR3	LPR3P	LPR3P-A	Trotline	LPR3P-AR014	850	283	750	9	LPR3-ARFT-Ind014		fillet			
LPR3	LPR3Q	LPR3Q-A	Trotline	LPR3Q-AR004	390	130	500		LPR3-ARFT-Comp06		fillet			
LPR3	LPR3Q	LPR3Q-C	Trotline	LPR3Q-AR005	438	146	600		LPR3-ARFT-Ind005		fillet			
LPR3	LPR3Q	LPR3Q-B	Trotline	LPR3Q-AR012	420	140	635	12		LPR3-ARWB-Ind012	WB			
LPR3	LPR3Q	LPR3Q-B	Trotline	LPR3Q-AR012	196	65	450		LPR3-ARFT-Comp06		fillet			
LPR4	LPR4C	LPR4C-B	Minnow Trap	LPR4C-AR018	60	20	335		compod	-				
LPR4	LPR4C LPR4D	LPR4C-B	Minnow Trap	LPR4C-AR018	16	5	207						< 279 mm	
LPR4	LPR4F	LPR4D-B		LPR4F-AR022				17	LPR4-ARFT-Ind022		fillet		< 2/9 IIIIII	
			Crab Trap		616	205	662	13	LPK4-AKF1-INDUZZ		Tillet			
LPR4	LPR4J	LPR4J-C	Eel Trap	LPR4J-AR017	46	15	264						< 279 mm	
LPR4	LPR4L	LPR4L-A	Gillnet	LPR4L-AR054	386	129	560						see specimen comments	Dead and pale; squishy; tail eaten
LPR4	LPR4M	LPR4M-A	Trotline	LPR4M-AR042	226	75	482		LPR4-ARFT-Comp08		fillet			
LPR4	LPR4M	LPR4M-B	Trotline	LPR4M-AR035	656	219	680	14	LPR4-ARFT-Ind035		fillet			
LPR4	LPR4M	LPR4M-B	Trotline	LPR4M-AR055	106	35	570							
LPR4	LPR4M	LPR4M-B	Trotline	LPR4M-AR056	244	81	480	102	LPR4-ARFT-Comp08		fillet			
LPR4	LPR4M	LPR4M-C	Trotline	LPR4M-AR033	44	15	273						< 279 mm	
LPR4	LPR4M	LPR4M-C	Trotline	LPR4M-AR041	468	156	610	15	LPR4-ARFT-Comp07		fillet			
LPR4	LPR4N	LPR4N-C	Trotline	LPR4N-AR024	318	106	511	16		LPR4-ARWB-Ind024	WB			
LPR4	LPR4N	LPR4N-A	Trotline	LPR4N-AR032	362	121	561	15	LPR4-ARFT-Comp07		fillet			
LPR4	LPR4N	LPR4N-A	Trotline	LPR4N-AR034	622	207	463	18	LPR4-ARFT-Ind034		fillet			
LPR4	LPR4N	LPR4N-A	Trotline	LPR4N-AR050	250	83	500							Urogenital opening swollen
LPR4	LPR4N	LPR4N-C	Trotline	LPR4N-AR060	352	117	550	19		LPR4-ARWB-Ind060	WB			
LPR4	LPR4Q	LPR4Q-C	Trotline	LPR4Q-AR025	422	141	603	20		LPR4-ARWB-Ind025	WB			
LPR4	LPR4Q	LPR4Q-A	Trotline	LPR4Q-AR026	608	203	650		LPR4-ARFT-Ind026		fillet		İ	
LPR4	LPR4Q	LPR4Q-A	Trotline	LPR4Q-AR043	366	122	561	22		LPR4-ARWB-Ind043	WB			
LPR4	LPR4Q	LPR4Q-A	Trotline	LPR4Q-AR044	666	222	652		LPR4-ARFT-Ind044		fillet			Bloody
LPR5	LPR5A	LPR5A-A	Minnow Trap	LPR5A-AR051	46	15	299							,
LPR5	LPR5A	LPR5A-A	Minnow Trap	LPR5A-AR052	68	23	314	103		LPR5-ARWB-Comp11	WB			
LPR5	LPR5A	LPR5A-C	Minnow Trap	LPR5A-AR057	52	17	300	103		LPR5-ARWB-Comp11	WB			
LPR5	LPR5A	LPR5A-A	Minnow Trap	LPR5A-AR058	42	14	270			LPR5-ARWB-Comp11	WB		< 279 mm (> 254 mm)	
LPR5	LPR5A	LPR5A-A	Minnow Trap	LPR5A-AR059	16	5	170	103		E 1.5 ARVID COMPTI			< 279 mm (> 234 mm)	
LPR5	LPR5A	LPR5A-A											- 273 11111	
LPR5	LPR5B	LPR5B-C	Minnow Trap	LPR5B-AR029 LPR5B-AR053	60 38	20 13	322						< 270 mm	
	LPR5F		Minnow Trap				255	2.4	LDDE ADET Compan		£:II.a.b		< 279 mm	
LPR5		LPR5F-B	Trotline	LPR5F-AR020	260	87	490		LPR5-ARFT-Comp09		fillet			
LPR5	LPR5F	LPR5F-A	Trotline	LPR5F-AR021	518	173	578		LPR5-ARFT-Ind021		fillet			
LPR5	LPR5F	LPR5F-B	Trotline	LPR5F-AR028	380	127	564	24	LPR5-ARFT-Comp09		fillet			Growth observed
LPR5	LPR5F	LPR5F-C	Trotline	LPR5F-AR036	138	46	43						< 279 mm	
LPR5	LPR5F	LPR5F-C	Trotline	LPR5F-AR048	542	181	615		LPR5-ARFT-Ind048		fillet			
LPR5	LPR5F	LPR5F-B	Trotline	LPR5F-AR049	638	213	675		LPR5-ARFT-Ind049		fillet			
LPR5	LPR5H	LPR5H-C	Trotline	LPR5H-AR030	524	175	592		LPR5-ARFT-Ind030		fillet			
LPR5	LPR5H	LPR5H-A	Trotline	LPR5H-AR031	206	69	475		LPR5-ARFT-Comp12		fillet			
LPR5	LPR5H	LPR5H-A	Trotline	LPR5H-AR037	246	82	460	29	LPR5-ARFT-Comp10		fillet			Bloody
LPR5	LPR5H	LPR5H-B	Trotline	LPR5H-AR038	244	81	473	29	LPR5-ARFT-Comp10		fillet			
LPR5	LPR5H	LPR5H-B	Trotline	LPR5H-AR061	254	85	480	105	LPR5-ARFT-Comp12		fillet			
LPR5	LPR5H	LPR5H-C	Trotline	LPR5H-AR062	390	130	560			LPR5-ARWB-Ind062	WB			
LPR5	LPR5J	LPR5J-C	Trotline	LPR5J-AR039	370	123	550	31		LPR5-ARWB-Ind039	WB			Bloody
LPR5	LPR5J	LPR5J-A	Trotline	LPR5J-AR040	506	169	610		LPR5-ARFT-Ind040		fillet			
LPR5	LPR5J	LPR5J-C	Trotline	LPR5J-AR063	48	16	300							
LPR5	LPR5J	LPR5J-B	Trotline	LPR5J-AR064	96	32	360							
LPR5	LPR5M	LPR5M-B	Crab Trap	LPR5M-AR086	442	147	570	104	LPR5-ARFT-Ind086		fillet			trap lost on 8/19/09 was recovered
LPR5	LPR5P	LPR5P-B	Eel Trap	LPR5P-AR027	16	5	218	10					< 279 mm	
113			up		10	,	-10			1			-273	

Table 2. P	roposed co	mposite sampl	les for American ee	I - REVISED									
	Location		Collection		Weight		Length	EPA	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite? Specimen Comments
LPR6	LPR6F	LPR6F-A		LPR6F-AR645	66	22	319						
LPR6	LPR6B	LPR6B-B	Minnow Trap	LPR6B-AR068	66	22	319						
LPR6	LPR60	LPR6O-B	Trotline	LPR6O-AR069	214	71	449	33		LPR6-ARWB-Ind069	WB		
LPR6	LPR60	LPR6O-A	Trotline	LPR6O-AR073	778	259	741		LPR6-ARFT-Ind073		fillet		
LPR6	LPR6P	LPR6P-A	Trotline	LPR6P-AR065	580	193	590	36	LPR6-ARFT-Ind065		fillet		
LPR6	LPR6R	LPR6R-C	Trotline	LPR6R-AR074	258	86	481	34		LPR6-ARWB-Ind074	WB		
LPR7	LPR7D	LPR7D-B	Minnow Trap	LPR7D-AR072	28	9	245						< 279 mm
LPR7	LPR7E	LPR7E-A	Minnow Trap	LPR7E-AR066	28	9	240						< 279 mm
LPR7	LPR7E	LPR7E-C	Minnow Trap	LPR7E-AR067	34	11	262						< 279 mm
LPR7	LPR7H	LPR7H-A	Crab Trap	LPR7H-AR070	126	42	373	37		LPR7-ARWB-Ind070	WB		
LPR7	LPR7O	LPR7O-A	Trotline	LPR70-AR071	600	200	624	38	LPR7-ARFT-Ind071		fillet		
LPR8	LPR8D	LPR8D-A	Minnow Trap	LPR8D-AR628	47	16	297						
LPR8	LPR8U	LPR8U-A	Boat Electrofishing	g LPR8U-AR161	36	12	310	39		LPR8-ARWB-Comp13	WB		
LPR8	LPR8U	LPR8U-A	Boat Electrofishing	gLPR8U-AR162	44	15	290	39		LPR8-ARWB-Comp13	WB		
LPR8	LPR8U	LPR8U-A	Boat Electrofishing	g LPR8U-AR167	36	12	287	39		LPR8-ARWB-Comp13	WB		
LPR8	LPR8V	LPR8V-A	Boat Electrofishing	g LPR8V-AR173	64	21	325	45	LPR8-ARFT-Comp14		fillet		
LPR8	LPR8V	LPR8V-A	Boat Electrofishing	g LPR8V-AR337	44	15	282	40		LPR8-ARWB-Comp15	WB		
LPR8	LPR8V	LPR8V-A	Boat Electrofishing	g LPR8V-AR640	34	11	282						
LPR8	LPR8W	LPR8W-A	Boat Electrofishing		40	13	282						
LPR8	LPR8W	LPR8W-A	Boat Electrofishing		46	15	296						
LPR8	LPR8W	LPR8W-A	Boat Electrofishing		38	13	285						
LPR8	LPR8X	LPR8X-A	Boat Electrofishing		44	15	282	41		LPR8-ARWB-Comp16	WB		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i: LPR8Y-AR108	50	17	305	42	LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi		46	15	288	43		LPR8-ARWB-Comp18	WB		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi		37	12	284						
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i: LPR8Y-AR280	49	16	286		LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i: LPR8Y-AR286	57	19	308	45	LPR8-ARFT-Comp14		fillet		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i: LPR8Y-AR296	38	13	282						
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i:LPR8Y-AR297	56	19	308	42	LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i: LPR8Y-AR317	46	15	282	43		LPR8-ARWB-Comp18	WB		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i: LPR8Y-AR318	66	22	317	45	LPR8-ARFT-Comp14		fillet		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i:LPR8Y-AR319	54	18	312		LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofi	i:LPR8Y-AR620	37	12	285						
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR132	37.5	13	281	202	LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR134	28.5	10	284	203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR195	48	16	289	42	LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i:LPR8Z-AR201	40	13	281		LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR204	46	15	293	202	LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR221	48	16	282	44		LPR8-ARWB-Comp19	WB		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR224	54	18	327	42	LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR226	48	16	294	44		LPR8-ARWB-Comp19	WB		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR377	47	16	294	44		LPR8-ARWB-Comp19	WB		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR378	53	18	289	42	LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR379	36	12	281	202	LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR387	53	18	330	42	LPR8-ARFT-Comp17		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR421	160	53	396	45	LPR8-ARFT-Comp14		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		78	26	340		LPR8-ARFT-Comp14		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR463	36	12	283	202	LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR470	38	13	279	202	LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		44	15	293		LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR487	38	13	291	202	LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		31	10	282		LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR515	33	11	279		LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	i: LPR8Z-AR537	70	23	324		LPR8-ARFT-Comp14		fillet		
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		44	15	292		LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		36	12	282		LPR8-ARFT-Comp21		fillet	CPG added sample (Comp21)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		33	11	281		LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	
LPR8	LPR8W	LPR8W-A	Boat Electrofishing		6	2	184						< 279 mm
LPR8	LPR8D	LPR8D-A		LPR8D-AR629	31	10	260						< 279 mm (> 254 mm)
LPR8	LPR8F	LPR8F-A		LPR8F-AR129	17.5	6	243						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		10	3	185						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		32	11	269	39		LPR8-ARWB-Comp13	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		28	9	264	39		LPR8-ARWB-Comp13	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		24	8	259						< 279 mm (> 254 mm)
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		28	9	251						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		16	5	225						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		16	5	224						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		8	3	177						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		8	3	174						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		8	3	168						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		14	5	198						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		20	7	232						< 279 mm
LPR8	LPR8U	LPR8U-A	Boat Electrofishing		13	4	209						< 279 mm
LPR8	LPR8V	LPR8V-A	Boat Electrofishing		22	7	244						< 279 mm
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DIC Z. I		mposite samp	les for American eel Collection	- REVISED	Maiabt		Longth	EDA.	Comple ID /ticque tune	Cample ID (tiesue tune			Reason for exclusion from	
Reach	Location	Trap ID	Method	Specimen ID	Weight (g)	33% of Wgt	Length (mm)	EPA No.	Sample ID (tissue type 1)	Sample ID (tissue type 2)	EPA sample	Notes	composite?	Specimen Comments
LPR8	LPR8V	LPR8V-A	Boat Electrofishing		44	15	277		1)	LPR8-ARWB-Comp15	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	Specimen comments
LPR8	LPR8V	LPR8V-A	Boat Electrofishing		32	11		40		LFR6-ARWB-Comp13	WD	includes fish < 279 min (> 234 min)	< 279 mm (> 254 mm)	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		20	7	249						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		36	12		40		LPR8-ARWB-Comp15	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		38	13		40		LPR8-ARWB-Comp15	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		24	8	247	-10		Erito Attivo Compas		merades han 4275 mm (* 254 mm)	< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		36	12							< 279 mm (> 254 mm)	
PR8	I PRSV	LPR8V-A	Boat Electrofishing		18	6	213						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		26	9	247						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		10	3	185						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		8	3	162						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		4	1	110						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		8	3	151						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		4	1	145						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		28	9	227						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		25	8	246						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		26	9	248						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		0.5	0	73						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		9	3	178						< 279 mm	
PR8	LPR8V	LPR8V-A					174							
PR8	LPR8V	LPR8V-A LPR8V-A	Boat Electrofishing Boat Electrofishing		7 9	2	174						< 279 mm < 279 mm	
	_				-									
PR8	LPR8V	LPR8V-A	Boat Electrofishing		3	1	135						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		16	5	222				-		< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		30	10							< 279 mm (> 254 mm)	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		24	8	265						< 279 mm (> 254 mm)	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		19	6	224						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		20	7	241						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		24	8	239						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		26	9	252						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing		10	3	187						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing	LPR8V-AR641	34	11	278						< 279 mm (> 254 mm)	
PR8	LPR8V	LPR8V-A	Boat Electrofishing	LPR8V-AR642	14	5	213						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing	LPR8V-AR643	10	3	174						< 279 mm	
PR8	LPR8V	LPR8V-A	Boat Electrofishing	LPR8V-AR644	21	7	250						< 279 mm	
PR8	LPR8W	LPR8W-A	Boat Electrofishing	LPR8W-AR088	26	9	259						< 279 mm (> 254 mm)	
PR8	LPR8W	LPR8W-A	Boat Electrofishing	LPR8W-AR089	12	4	202						< 279 mm	
PR8	LPR8W	LPR8W-A	Boat Electrofishing		2	1	117						< 279 mm	
PR8	LPR8W	LPR8W-A	Boat Electrofishing		16	5	212						< 279 mm	
PR8	LPR8W	LPR8W-A	Boat Electrofishing		9	3	186						< 279 mm	
PR8	LPR8W	LPR8W-A	Boat Electrofishing		36	12	269						< 279 mm (> 254 mm)	
LPR8	LPR8W	LPR8W-A	Boat Electrofishing		9	3	191						< 279 mm	
LPR8	LPR8X	LPR8X-A	Boat Electrofishing		20	7	237						< 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		8	3	143						< 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		20	7	217						< 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		18	6	224						< 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		40	13		41		LPR8-ARWB-Comp16	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		34	11				LPR8-ARWB-Comp16	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		20	7	224	41		LFR0-ARWB-Comp10	WD	includes fish < 275 film (> 234 film)	< 279 mm (> 234 mm)	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		30	10							< 279 mm (> 254 mm)	
PR8	LPR8X													
PR8	LPR8X	LPR8X-A	Boat Electrofishing Boat Electrofishing		32 18	11 6	266 246						< 279 mm (> 254 mm) < 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		26	9	246				1		< 279 mm < 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		32									
	_				_	11							< 279 mm (> 254 mm)	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		24	8	249			LDDO ADME C	LL/D	landade fish a 270 mm (s 271	< 279 mm	
PR8	LPR8X	LPR8X-A	Boat Electrofishing		34	11		41		LPR8-ARWB-Comp16	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		27	9	253				1		< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		36	12							< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		14	5	199						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		42	14		43		LPR8-ARWB-Comp18	WB		< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		40	13							< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		29	10							< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		36	12							< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		32.5	11							< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		30	10							< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		33.5	11							< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis	LPR8Y-AR120	10.5	4	181						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis	LPR8Y-AR121	32	11	257						< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis	LPR8Y-AR122	11	4	210						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		2	1	110						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		12.5	4	200						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		12	4	186				İ		< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		7	2	157				İ		< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		9	3	178						< 279 mm	
				LPR8Y-AR128	4	1	139						< 279 mm	

<u>2.</u> F	Location	posice sump	les for American eel Collection		Weight		Length	EPA S	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt		No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		15		204		-,	-,			< 279 mm	passing and a second
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		6	2	163						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		2	1	120						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		6	2	150						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		4	1	140						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		7	2	167						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		31								< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		5	2	142						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		4	1	137						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		32	11	268						< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		8	3	173						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		29								< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		16		218						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		25		250						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		32		263						< 279 mm (> 254 mm)	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		9	3	192						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		28		249						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		16		209						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		20		213						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		4	1	117						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		16		206	-					< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		28		243	-					< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		30			-					< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		30	10	132						< 279 mm < 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis			2	144	-					< 279 mm < 279 mm	
PR8	LPR8Y	LPR8Y-A			6 38									
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis Backpack Electrofis		38 16	13	2/5	-					< 279 mm (> 254 mm) < 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		30	-		-					< 279 mm < 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		24		221						< 279 mm	
PR8	LPR8Y	LPR8Y-A			28		256							
PR8	LPR8Y		Backpack Electrofic				233						< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A LPR8Y-A	Backpack Electrofis		22								< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis Backpack Electrofis		3 40	1	118 266						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		32	13 11							< 279 mm (> 254 mm) < 279 mm	
	LPR8Y	LPR8Y-A			20								< 279 mm	
LPR8	_	_	Backpack Electrofis				201							
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		28		249						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		18		221						< 279 mm	
	LPR8Y	LPR8Y-A LPR8Y-A	Backpack Electrofis		12		204						< 279 mm	
LPR8	LPR8Y		Backpack Electrofis		6	2	142						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		7	2	164						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		5	2	144						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofic		0.5		88						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		3	1	122						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		44	15		43		LPR8-ARWB-Comp18	WB		< 279 mm (> 254 mm)	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		8	3	173						< 279 mm	
LPR8	LPR8Y	LPR8Y-A	Backpack Electrofis		7	2	152						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		6	2	158						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		7	2	167						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		6	2	159						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		20		212						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		26	9	243						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		5	2	172						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		28	9	247						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		10		197						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		5	2	145						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		6	2	155						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		20	7	230						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		12		180						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		25		240						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		36		270						< 279 mm (> 254 mm)	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		3	1	115						< 279 mm	
PR8	LPR8Y	LPR8Y-A	Backpack Electrofis		4	1	140						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		28	9	239						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR131	32	11	260						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR133	20	7	232						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR135	30		265						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		6	2	152						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		29								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		8	3	170						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		20		215						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		38.5			203 L	PR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
	LPR8Z	LPR8Z-A	Backpack Electrofis		12	4	200		p==				< 279 mm	
PRX					23.5		254						< 279 mm	
PR8 PR8	LPR8Z	LPR8Z-A	Backpack Electrofis											

	Location	mposite samp	les for American eel Collection	- NEVISED	Weight		Length	EPA	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		8.5	337001 1190	180	110.	-/	-/	2171 Sumple	Notes	< 279 mm	эресинен сониненся
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	145						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		9	3	184						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	160						< 279 mm	
					-									
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10.5	4	185						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		16	5	214						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		5	2	147						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		15	5	203						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		11	4	199						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR153	2.5	1	121						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR154	9	3	179						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR155	4	1	129						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	135						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	142						< 279 mm	
PR8	LPR87	LPR8Z-A	Backpack Electrofi	LPR87-AR158	3.5	1	127						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		36	12	265						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		35	12							< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		48	16		42	LPR8-ARFT-Comp17		fillet	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
								42	LPR6-ARF1-COMP17		IIIIet	includes fish < 279 mm (> 254 mm)		
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		28	9	238						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		28	9	250						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		8	3	146						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		34	11							< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		16	5	191						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR198	12	4	187						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR199	22	7	227						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		20	7	223						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		36	12							< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		26	9	250						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12	4	194						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		22	7	226						< 279 mm	
PR8	LPR8Z					4	179							
	_	LPR8Z-A	Backpack Electrofi		12								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		26	9	236						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		18	6	217						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		8	3	154						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR211	18	6	222						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR212	10	3	181						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR213	32	11	272						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR214	4	1	141						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	130						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	138						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12	4	205						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12	4	206						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	172						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		20	7	223						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		38	13		203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		14	5	191						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR225	30	10							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		30	10							< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR228	24	8	249						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR229	24	8	256						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		20	7	241						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10	3	187						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	153						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10	3	184						< 279 mm	
PR8	LPR8Z						156							
		LPR8Z-A	Backpack Electrofi		4	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		32	11	265						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12	4	178						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12	4	178						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12	4	184						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR239	12	4	193						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	154						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	174						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	137						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	137						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	144						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		5	2	151						< 279 mm	
	_													
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		5	2	143						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	147						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	160						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	125						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR250	5	2	146						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR251	4	1	140						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		5	2	139						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1	135						< 279 mm	

DIC ZITT	Location	mposite samp	les for American eel Collection	- KENISED	Weight		Length	EPA	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
	LPR8Z	LPR8Z-A	Backpack Electrofis		16/	3370 01 Wgt	111	110.	-1	-,	Livisample	110103	< 279 mm	эрсениен сонинсись
	LPR8Z	LPR8Z-A	Backpack Electrofis		3	1							< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		3								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		4								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		3								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		2								< 279 mm	
.PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR260	2	1	107						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		2	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR262	3	1	123						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR263	6	2	154						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR264	4	1	129						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR265	3	1	126						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR266	2	1	104						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		2	1	104						< 279 mm	
	LPR87	LPR8Z-A	Backpack Electrofis		1	0	92						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		18	_							< 279 mm	
.PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		33								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		31								< 279 mm (> 254 mm)	
	LPR8Z	LPR8Z-A	Backpack Electrofis		6								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		13								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR351	3	1	117						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR352	5	2	136						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		25	8							< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		11								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		15								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		12								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		8		130						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electronis		18	-							< 279 mm < 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		6	_							< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		7								< 279 mm	
.PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR361	8	3	167						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR362	30	10	269						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR363	33	11	278						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		37	12	267						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		5								< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		1								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		16								< 279 mm	
	LPR8Z	LPR8Z-A			17								< 279 mm	
		LPR8Z-A	Backpack Electrofis		10								< 279 mm < 279 mm	
	LPR8Z		Backpack Electrofis				-							
	LPR8Z	LPR8Z-A	Backpack Electrofis		9								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		12								< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR372	8	3	165						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR373	36	12	278						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR374	26	9	245						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		9	3	176						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR376	26	9	255						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		13								< 279 mm	
PR8	LPR8Z	LPR8Z-A			14								< 279 mm	
	LPR8Z		Backpack Electrofis									+		
		LPR8Z-A	Backpack Electrofis		15								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		28								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		4	_							< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		14								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		19	6	218						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR388	14	5	193						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR389	30	10	256						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		24								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		38			203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
	LPR8Z	LPR8Z-A	Backpack Electrofis		28							, , , , , , , , , , , , , , , , , , , ,	< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		4								< 279 mm	
PR8	LPR8Z	LPR8Z-A			22							+	< 279 mm	
			Backpack Electrofis											
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		31								< 279 mm (> 254 mm)	
	LPR8Z	LPR8Z-A	Backpack Electrofis		7								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		25								< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		29								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR399	8	3	167						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR400	11	4	200						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		2		110						< 279 mm	
	LPR8Z	LPR8Z-A	Backpack Electrofis		34								< 279 mm (> 254 mm)	
	LPR8Z	LPR8Z-A	Backpack Electrofis		10								< 279 mm (> 234 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		23								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		4								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		9								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR407	6								< 279 mm	
PR8		LPR8Z-A	In 1 1 51 1 51	LPR8Z-AR408	14	5	194						< 279 mm	

DIE Z. P	Location	mposite samp	les for American eel Collection	- KEVISED	Weight		Length	EPA	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		(8)	33% 01 Wgt	96	NO.	1)	2)	LFA sample	Notes	< 279 mm	Specimen comments
LPR8	LPR8Z	LPR8Z-A			3	1							< 279 mm < 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		18	6	113 221						< 279 mm < 279 mm	
	_	_	Backpack Electrofis		-								-	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		7	2	152						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		4	1	138						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		24	8	245						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR415	3	1	125						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		7	2	156						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR417	33	11	274						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR418	4	1	130						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR419	22	7	223						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR420	34	11	270						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		4	1	134						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		31	10	241						< 279 mm	
PR8	LPR87	LPR87-A	Backpack Electrofis		11	4	181						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		24	8	244						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		21	7	233						< 279 mm	
	_													
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		6	2	145						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		35	12	273						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		30	10	245						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		25	8	246						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR431	29	10	258						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR432	25	8	254						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		28	9	254						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		36	12	276						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		47	16	274	44		LPR8-ARWB-Comp19	WB	includes fish < 279 mm (> 254 mm)	< 279 mm (> 254 mm)	
PR8	LPR87	LPR87-A	Backpack Electrofis		2	10	95			/ Comp13			< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		8	3	167						< 279 mm	
					-		254							
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		30	10							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		2	1	110						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		12	4	185						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR441	22	7	227						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR442	15	5	202						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR443	10	3	172						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR444	11	4	202						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		24	8	234						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		28	9	235						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		27	9	261						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		4	1	126						< 279 mm (> 234 mm)	
					2									
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis			1	100						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		6	2	147						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis		9	3	160						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR452	4	1	129						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR453	6	2	148						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR454	3	1	117						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR455	42	14	264	203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR456	7	2	158						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		8	3	170						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		22	7	227						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		6	2	154						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electronis		32	11	247							
													< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		29	10	232						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		27	9	247					1	< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		34	11	269						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR466	33	11	273						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR467	9	3	178						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		20	7	237						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		5	2	153						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		5	2	156						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		6	2	162						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		14	5	206						< 279 mm	
PR8	LPR8Z	LPR8Z-A			35	12	251							
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis Backpack Electrofis		2	12	125						< 279 mm < 279 mm	
					_							1		
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		3	1	122						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		4	1	131						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		8	3	174						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR479	33	11	245						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR480	23	8	233						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis	LPR8Z-AR481	16	5	224						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		18	6	224						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofis		10	3	210						< 279 mm	
	_	LPR8Z-A	Backpack Electrofis		36	12	262						< 279 mm (> 254 mm)	
PR2			Packpack LICCLIOIS											
LPR8 LPR8	LPR8Z LPR8Z	LPR8Z-A	Backpack Electrofis	I DRR7_ARARC	6	2	161						< 279 mm	

Table 2. Proposed composite samples for American eel - REVISED

	Location	Imposite samp	les for American eel Collection	- KEVISED	Weight		Length	EPA	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10	3			,	,			< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10	3							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR491	7	2	179						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR492	15	5	213						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		2	1	111						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		24	8							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		11	4	233						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		5	2							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2	156						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		14	5							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		21								< 279 mm	
PR8	LPR87	LPR8Z-A	Backpack Electrofi		2	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		28								< 279 mm	
PR8	LPR87	LPR8Z-A	Backpack Electrofi		4	1	148						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		12								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		2	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		2	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		3	1							< 279 mm	
PRS	LPR8Z	LPR8Z-A	Backpack Electrofi		8	3							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		7	2	27.1						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2							< 279 mm	
.PR8 .PR8	LPR8Z LPR8Z	LPR8Z-A LPR8Z-A	Backpack Electrofi		7	2							< 279 mm < 279 mm	
	LPR8Z LPR8Z	LPR8Z-A LPR8Z-A			4	1							< 279 mm < 279 mm	
PR8	_		Backpack Electrofi											
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10	3							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		20								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		7	2							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		2	1							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		7	2							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		2	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR521	2	1	. 112						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR522	19	6	220						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR523	3	1	125						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR524	10	3	204						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR525	1	C	94						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR526	2	1	106						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		8	3	175						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		30	10	259						< 279 mm (> 254 mm)	
LPR8	LPR87	LPR87-A	Backpack Electrofi		9	3							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		19								< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		25								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		36								< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A												
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		32								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		26 40			202	LDDG ADET C22		fillet	CDC - dd- dd- (C22)	< 279 mm	
			Backpack Electrofi			13		203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		34								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		22								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		32								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		38								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		4	1							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		28								< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR550	14								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR551	36	12	261	203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR552	14		202						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR553	24	8	249						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		30	10	263						< 279 mm (> 254 mm)	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR557	34		252						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		3	1							< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		14								< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		14	5							< 279 mm	
	LPR8Z	LPR8Z-A												
.PR8 .PR8	LPR8Z	LPR8Z-A LPR8Z-A	Backpack Electrofi		14	2							< 279 mm	
			Backpack Electrofi			_								
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10		_						< 279 mm	
PR8	LPR8Z	LPR8Z-A	Backpack Electrofi		10								< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		8	3							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi		6	2							< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	IDDO7 ADEGO	20	7	233						< 279 mm	

Table 2. P	roposed co	omposite sample	es for American eel	I - REVISED										
	Location	1	Collection		Weight		Length	EPA	Sample ID (tissue type	Sample ID (tissue type			Reason for exclusion from	
Reach	ID	Trap ID	Method	Specimen ID	(g)	33% of Wgt	(mm)	No.	1)	2)	EPA sample	Notes	composite?	Specimen Comments
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR569	10	3	190						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR570	14	5	212						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR571	10	3	192						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR572	9	3	177						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR573	13	4	216						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR574	13	4	195						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR575	33	11	255						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR576	12	4	200						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR577	12	4	194						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR578	19	6	230						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR579	13	4	210						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR580	12	4	184						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR581	11	4	188						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR582	36	12	271						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR583	19	6	215						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR584	10	3	181						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR585	14	5	200						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR586	20	7	230						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR587	12	4	192						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR588	21	7	224						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR589	6	2	150						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR590	22	7	227						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR591	39	13	275	203	LPR8-ARFT-Comp22		fillet	CPG added sample (Comp22)	< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR592	31	10	265						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR593	28	9	260						< 279 mm (> 254 mm)	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR594	4	1	126						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR595	9	3	175						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR596	13	4	200						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR597	6	2	155						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR598	9	3	185						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR599	5	2	145						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR600	3	1	125						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR601	3	1	125						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR602	5	2	145						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR603	5	2	150						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR604	3	1	131						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR605	4	1	135						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR606	6	2	159						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR607	5	2	146						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR608	4	1	131						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR609	11	4	190						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR610	4	1	140						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR611	9	3	170						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR612	3	1	125						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR613	4	1	140						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR614	8	3	170						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR615	9	3	180						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR616	5	2	145						< 279 mm	
LPR8	LPR8Z	LPR8Z-A	Backpack Electrofi	LPR8Z-AR617	2	1	100						< 279 mm	

Ref No.	Species	Notes	Ind/Comp	FishID	BW	length	Size	Type1	Type2
1	American eel	USEPA & Partner Agency Agree	Composite	LPR1G-AR075 + LPR1G-AR080	764	550 & 580	С	fillet	71
2	American eel	USEPA & Partner Agency Agree	Individual	LPR1G-AR085	452	575	С	fillet	offal
3	American eel	USEPA & Partner Agency Agree	Composite	LPR1G-AR646+LPR1G-AR077	638	520 & 529	В	fillet	0.1.0.
4	American eel	USEPA & Partner Agency Agree	Composite	LPR1Q-AR081+LPR1Q-AR082+LPR1Q-AR083	64+46+60=170	392 & 287 & 340	Α		whole body
5	American eel	USEPA & Partner Agency Agree	Composite	LPR2F-AR084+LPR2G-AR079+LPR2N-AR078	118+232+250= 600	400 & 470 & 508	В	fillet	offal
6	American eel	USEPA & Partner Agency Agree	Composite	LPR3L-AR006+LPR3L-AR007	360+290=650	520 & 525	В	fillet	
7	American eel	USEPA & Partner Agency Agree	Individual	LPR3L-AR010	490	620	С	fillet	
8	American eel	USEPA & Partner Agency Agree	Individual	LPR3P-AR001	375	551	С		whole body
9	American eel	USEPA & Partner Agency Agree	Individual	LPR3P-AR014	850	750	D	fillet	
10	American eel	USEPA & Partner Agency Agree	Composite	LPR3Q-AR004+LPR3Q-AR013	390+196=586	450 & 500	В	fillet	
11		USEPA & Partner Agency Agree	Individual	LPR3Q-AR005	438	600	С	fillet	
12	American eel	USEPA & Partner Agency Agree	Individual	LPR3Q-AR012	420	635	D	mee	whole body
101	American eel	All agree	Individual	LPR3L-AR009	285	480	В		whole body
201	American eel	possible additional sample	Composite	LPR3P-AR002 + LPR3P-AR003	360 + 290 = 650	520 + 525			fillet
13	American eel	USEPA & Partner Agency Agree	Individual	LPR4F-AR022	616	662	D	fillet	
14		USEPA & Partner Agency Agree	Individual	LPR4M-AR035	656	680	D	fillet	
15	American eel	All agree	Individual	LPR4M-AR041 + LPR4N-032	468 + 362 = 830	610 + 561	С	fillet	
16		USEPA & Partner Agency Agree	Individual	LPR4N-AR024	318	511	С		whole body
18	American eel	USEPA & Partner Agency Agree	Individual	LPR4N-AR034	622	463	В	fillet	Wildle body
19	American eel	All agree	Individual	LPR4N-AR060	352	550	C	mee	whole body
20	American eel	USEPA & Partner Agency Agree	Individual	LPR4Q-AR025	366	561	C		whole body
21	American eel	All agree	Individual	LPR4Q-AR026	608	650	D	fillet	whole body
22	American eel	All agree	Individual	LPR4Q-AR044	666	652	D	fillet	
23	American eel	USEPA & Partner Agency Agree	Individual	LPR4Q-AR043	422	603	С	mee	whole body
102	American eel	All agree	Composite	LPR4M-AR042+LPR4M-AR056	226+244=470	482+480	В	fillet	whole body
24	American eel	USEPA & Partner Agency Agree	Composite	LPR5F-AR020 + LPR5F-AR028	260+380=640	490 & 564	C	fillet	
25	American eel	USEPA & Partner Agency Agree	Individual	LPR5F-AR021	518	578	C	fillet	
26		All agree	Individual	LPR5F-AR048	542	615	C	fillet	
27	American eel	USEPA & Partner Agency Agree	Individual	LPR5F-AR049	638	675	D	fillet	
28	American eel	USEPA & Partner Agency Agree	Individual	LPR5H-AR030	524	592	C	fillet	
29	American eel	USEPA & Partner Agency Agree	Composite	LPR5H-AR037 + LPR5H-AR038	244+246=490	460 & 473	В	fillet	
30	American eel	USEPA & Partner Agency Agree	Individual	LPR5H-AR062	390	560	C	met	whole body
31	American eel	USEPA & Partner Agency Agree	Individual	LPR5J-AR039	370	550	C		whole body
32	American eel	USEPA & Partner Agency Agree	Individual	LPR5J-AR039	506	610	С	fillet	whole body
103	American eel	All agree	Composite	LPR5A-AR052+LPR5A-AR058+LPR5A-AR057	68+42+52=162	314+270+300	A	met	whole body
103	American eel	All agree	Individual	LPR5M-AR086	442	570	C	fillet	whole body
105	American eel	All agree	Composite	LPR5H-AR031+LPR5H-AR061	206+254=460	475+480	В	fillet	
33	American eel	USEPA & Partner Agency Agree	Individual	LPR60-AR069	214	449	В	IIIIet	whole body
34	American eel	USEPA & Partner Agency Agree	Individual	LPR6R-AR074	258	481	В		whole body
35	American eel	USEPA & Partner Agency Agree	Individual	LPR60-AR073	778	741	D	fillet	Wiloic body
36	American eel	USEPA & Partner Agency Agree	Individual	LPR6P-AR065	580	590	C	fillet	
37	American eel	USEPA & Partner Agency Agree	Individual	LPR7H-AR070	126	373	A	IIIIet	whole body
38	American eel	USEPA & Partner Agency Agree	Individual	LPR70-AR070	600	624	D	fillet	wildle body
30	American eel	USEPA & Partner Agency Agree	Composite	LPR8U-AR162+LPR8U-AR161+LPR8U-AR167+LPR-AR160+LPR8U-	44+36+36+32+28=1	290 & 310 & 287 & 269 & 264	A	met	whole body
39	ici icaii eei	/ Grant and Agency Agree	30poo.to	AR163	76	250 & 510 & 207 & 209 & 204	l		loic body
40	American eel	USEPA & Partner Agency Agree	Composite	LPR8V-AR337+LPR8V-AR107+LPR8V-AR178+LPR8V-AR175	44+44+38+36=162	282 & 277 & 273 & 268	Α		whole body
41	American eel	USEPA & Partner Agency Agree	Composite	LPR8X-AR291+LPR8X-AR097+LPR8X-AR630+LPR8X-AR098	44+40+34+34=152	282 & 268 & 277 & 273	A		whole body
7.1	American eel	USEPA & Partner Agency Agree	Composite	LPR8Y-AR297 + LPR8Y-AR-319 + LPR8Z-AR224 + LPR8Z-AR-378 +	56+54+54+53+53+5	308 & 312 & 327 & 289 & 330 8	_	fillet	ioic body
				LPR8Z-AR387 + LPR8Y-AR108 + LPR8Y-AR280 + LPR8Z-AR191 +	0+49+48+48=465	305 & 286 & 278 & 289	1	mee	
42				LPR8Z-AR195		333 & 200 & 270 & 209			
43	American eel	USEPA & Partner Agency Agree	Composite	LPR8Y-AR317+LPR8Y-AR119+LPR8Y-AR325+LPR8Y-AR112	46+46+44+42=178	282 & 288 & 271 & 278	Α		whole body
44	American eel	/ Granting / Igono / Agree	Composite	LPR8Z-AR221+LPR8Z-AR226+LPR8Z-AR377+LPR8Z-AR435	48+48+47+47=190	282 & 294 & 294 & 274	A		whole body
	American eel	USEPA & Partner Agency Agree	Composite	LPR8Z-AR421+LPR8Z-AR460+LPR8Z-AR537+LPR8Y-AR318+	160+78+70+66+64+	396 & 340 & 324 & 317 & 325 8		fillet	whole body
45	American eer	/ Grant and Agency Agree	30poo.to	LPR8V-AR173 + LPR8Y-AR286	57=495	308	1	illet	
43	American eel	possible additional sample	Composite	LPR8Z-AR132 + LPR8Z-AR201 + LPR8Z-AR204 + LPR8Z-AR379 +	396	300			fillet
	American eei	possible additional sailfple	Composite	LPR8Z-AR463 + LPR8Z-AR470 + LPR8Z-AR483 + LPR8Z-AR487 +	030				illet
202				LPR8Z-AR403 + LPR8Z-AR470 + LPR8Z-AR483 + LPR8Z-AR487 + LPR8Z-AR548 + LPR8Z-AR555					
202	American eel	possible additional sample	Composite	LPR8Z-AR348 + LPR8Z-AR555 LPR8Z-AR134 + LPR8Z-AR497 + LPR8Z-AR515 + LPR8Z-AR536 +	397				fillet
	American eei	possible additional sample	Composite	LPR8Z-AR134 + LPR8Z-AR497 + LPR8Z-AR515 + LPR8Z-AR536 + LPR8Z-AR140 + LPR8Z-AR222 + LPR8Z-AR391 + LPR8Z-AR455 +	- 551				illet
203				LPR8Z-AR540 + LPR8Z-AR551 + LPR8Z-AR591 LPR8Z-AR540 + LPR8Z-AR551 + LPR8Z-AR591					
203				LFNOZ-MNO4U + LFNOZ-MNOOI + LFNOZ-ARO91					

Size Class Definitions A = <400 mm B = 400-525 mm C = 526-620 mm D = >620 mm

нн	Ind. Fillet	Comp. Fillet	Total
Α	0	2	2
В	1	7	8
С	10	1	11
D	8	0	8
			29
Eco	Whole body	Offal	Total
A	8	0	8
В	3	1	4
c	7	1	8
D	1	0	1
		-	21

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American eel	USEPA & Partner Agency Agree		Composite	LPR8Y-AR297 + LPR8Y-AR-	56+54+54	308 & 312 &	Α	fillet	
				319 + LPR8Z-AR224 + LPR8Z-	+53+53+5	327 & 289 &			
				AR-378 + LPR8Z-AR387 +	0+49+48+	330 & 305 &			
					48=465				
				LPR8Y-AR108 + LPR8Y-AR280		286 & 278 &			
				+ LPR8Z-AR191 + LPR8Z-		289			
				AR195					
	USEPA & Partner Agency Agree		Composite	LPR8Z-AR421 + LPR8Z-AR460	160+78+7	396 & 340 &	Α	fillet	
				+ LPR8Z-AR537 + LPR8Y-	0+66+64+	324 & 317 &			
				AR318 + LPR8V-AR173 +	57=495	325 & 308			
						323 Q 306			
				LPR8Y-AR286	ļ				
	USEPA & Partner Agency Agree		Composite	LPR1G-AR646+LPR1G-AR077	638	520 & 529	В	fillet	
	USEPA & Partner Agency Agree		Composite	LPR2F-AR084+LPR2G-	118+232+	400 & 470 &	В	fillet	offal
				AR079+LPR2N-AR078	250= 600	508			
							,		
	USEPA & Partner Agency Agree		Composite	LPR3L-AR006+LPR3L-AR007	360+290=	520 & 525	В	fillet	
					650				
	USEPA & Partner Agency Agree		Composite	LPR3Q-AR004+LPR3Q-AR013	390+196=	450 & 500	В	fillet	
					586				
	New Sample	ок	Composite	LPR4M-AR042+LPR4M-	226+244=	482+480	В	fillet	
	New Sample	O.K	Composite	AR056	470	4021400		illet	
	USEPA & Partner Agency Agree		Individual	·	(463	В	CILL	
				LPR4N-AR034	622	463		fillet	
	New Sample	ок	Composite	LPR5H-AR031+LPR5H-AR061		475+480	В	fillet	
					460				
	USEPA & Partner Agency Agree		Composite	LPR5H-AR037 + LPR5H-	244+246=	460 & 473	В	fillet	
				AR038	490				
	USEPA & Partner Agency Agree		Composite	LPR1G-AR075 + LPR1G-	764	550 & 580	С	fillet	
	ŭ , ŭ		· '	AR080					
	USEPA & Partner Agency Agree		Individual	LPR1G-AR085	452	575	С	fillet	offal
	USEPA & Partner Agency Agree		Individual	LPR3L-AR010	490	620	С	fillet	Onai
	USEPA & Partner Agency Agree		Individual	LPR3Q-AR005	490		С		ļ
			.ā	<u> </u>		600		fillet	
	Sample not proposed for analysis	Retain - add fish LPR4N-AR032	Individual	LPR4M-AR041	468	610	С	fillet	
	New Sample	Remove sample	Composite	LPR4N-AR032+LPR4NAR060	362+352=	561+550	С	fillet	
					714				
	USEPA & Partner Agency Agree		Composite	LPR5F-AR020 + LPR5F-AR028	260+380=	490 & 564	С	fillet	
					640				
	USEPA & Partner Agency Agree		Individual	LPR5F-AR021	518	578	С	fillet	
	Sample not proposed for analysis	Retain	Individual	LPR5F-AR048	542	615	С	fillet	
	USEPA & Partner Agency Agree	Netalli	Individual		ţ		С		
				LPR5H-AR030	524	592	C	fillet	ļ
	USEPA & Partner Agency Agree		Individual	LPR5J-AR040	506	610		fillet	
	New Sample	OK	Individual	LPR5M-AR086	442	570	С	fillet	
	USEPA & Partner Agency Agree		Individual	LPR6P-AR065	580	590	С	fillet	
	USEPA & Partner Agency Agree		Individual	LPR3P-AR014	850	750	D	fillet	
	USEPA & Partner Agency Agree		Individual	LPR4F-AR022	616	662	D	fillet	
	USEPA & Partner Agency Agree		Individual	LPR4M-AR035	656	680	D	fillet	•
	Sample not proposed for analysis	Retain	Individual	LPR4Q-AR026	608	650	D	fillet	
	Sample not proposed for analysis	Retain	Individual	LPR4Q-AR044	666	652	D	fillet	
	USEPA & Partner Agency Agree	rotani	Individual	<u> </u>	ç		D		
				LPR5F-AR049	638	675	D	fillet	
	USEPA & Partner Agency Agree		Individual	LPR6O-AR073	778	741	ט	fillet	

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USEPA & Partner Agency Agree		Individual	LPR7O-AR071	600	624	D	fillet	
 USEPA & Partner Agency Agree		Composite	LPR1Q-AR081+LPR1Q-	64+46+60	392 & 287 &	Α		whole
			AR082+LPR1Q-AR083	=170	340			body
New Sample	ок	Composite	LPR5A-AR052+LPR5A- AR058+LPR5A-AR057	68+42+52 =162	314+270+300	Α		whole body
						ļ		
USEPA & Partner Agency Agree		Individual	LPR7H-AR070	126	373	Α		whole body
 USEPA & Partner Agency Agree		Composite	LPR8U-AR162+LPR8U-	44+36+36	290 & 310 &	Α		whole
COLI / Car artifor / tgorioy / tgroo		Composito		+32+28=1	287 & 269 &	, ,		body
			AR160+LPR8U-AR163	76	264			body
 USEPA & Partner Agency Agree		Composite	LPR8V-AR337+LPR8V-	44+44+38		Α		whole
5 - 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1			AR107+LPR8V-AR178+LPR8V-		273 & 268			body
			AR175		273 & 200			body
USEPA & Partner Agency Agree		Composite	LPR8X-AR291+LPR8X-	44+40+34	282 & 268 &	Α		whole
			AR097+LPR8X-AR630+LPR8X-	+34=152	277 & 273			body
			AR098					,
 USEPA & Partner Agency Agree		Composite	LPR8Y-AR317+LPR8Y-	46+46+44	282 & 288 &	Α		whole
			AR119+LPR8Y-AR325+LPR8Y-	+42=178	271 & 278			body
			AR112					,
		Composite	LPR8Z-AR221+LPR8Z-	48+48+47	282 & 294 &	Α		whole
			AR226+LPR8Z-AR377+LPR8Z-	+47=190	294 & 274			body
			AR435					
New Sample	ок	Individual	LPR3L-AR009	285	480	В		whole
								body
USEPA & Partner Agency Agree		Individual	LPR6O-AR069	214	449	В		whole
								body
USEPA & Partner Agency Agree		Individual	LPR6R-AR074	258	481	В		whole
								body
USEPA & Partner Agency Agree		Individual	LPR3P-AR001	375	551	С		whole
 								body
USEPA & Partner Agency Agree		Individual	LPR4N-AR024	318	511	С		whole
		0	2					body
Sample combined with LPR4N-AR032	Retain	Individual	LPR4N-AR060	352	550	С		whole
 USEPA & Partner Agency Agree		Individual	LPR4Q-AR025	366	561	С		body whole
OSEFA & Faither Agency Agree		iliuiviuuai	LPR4Q-ARU25	300	201	C		body
 USEPA & Partner Agency Agree		Individual	LPR4Q-AR043	422	603	С		whole
55 2. / (a. a. a , (go,) / (g)		a.v.aaa.	LF N4Q-AN043		003			body
USEPA & Partner Agency Agree		Individual	LPR5H-AR062	390	560	С		whole
J			2. 1.5.1. 7 11.002		500			body
USEPA & Partner Agency Agree		Individual	LPR5J-AR039	370	550	С		whole
5 7 3 4								body
USEPA & Partner Agency Agree		Individual	LPR3Q-AR012	420	635	D		whole
								body
								boay

APPENDIX B. PROTOCOL MODIFICATION FORMS

Protocol Modification Form: Fish/Decapod QAPP No. 1

Project Name and Number: Passaic RI 09.58.02.31

Material to be Sampled: Tissue

Measurement Parameter: Semivolatile organic compounds (SVOCs) and alkylated

polycyclic aromatic hydrocarbons (PAHs).

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

In the Fish/Decapod QAPP, Worksheet Nos. 12 and 28 indicate a requirement for certified reference materials (CRMs) for SVOCs and alkylated PAHs in tissue. CRMs for SVOCs and alkylated PAHs in tissue are not a requirement in the Benthic QAPP.

Reason for Change in Field Procedure or Analysis Variation:

Appropriate CRMs for tissue are not available for SVOCs and alkylated PAHs. Only CRMs that contain the parent PAHs are available and Alpha Analytical is only conducting the alkylated PAH analysis. Furthermore, there have been no CRMs identified with concentrations high enough for detection with a full SVOC scan under USEPA Method SW-846 8270.

Variation from Field or Analytical Procedure:

None.

USEPA Authority:

Special Equipment, Materials or Personnel Required:

CRMs will not be used as quality control samples for the SVOC and alkylated PAH tissue analyses associated with the Fish/Decapod QAPP.

Initiator's Name:	DaDL.	Date:	10/28/09
initiator 3 Name.		Date.	10/20/03
Project Manager:	Lisa Solm	Date:	10/28/09
QA Manager:	Tad Kleshler	Date:	10/28/09

Date:

Protocol Modification Form: Fish/Decapod QAPP No. 7

Project Name and Number: Passaic RI 09.58.02.31

Material to be Analyzed: Tissue

Measurement Parameter: Alkylated polynuclear aromatic hydrocarbons (PAHs)

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Fish/Decapod QAPP Worksheet Nos. 12 and 28 and Attachment T26, Standard Operating Procedure (SOP) No. O-008. Analysis of Parent and Alkylated Polynuclear Aromatic Hydrocarbons, Selected Heterocyclic Compounds, Steranes, Triterpanes, and Triaromatic Steroids by GC/MS – SIM, Revision 4, 10/08/08.

Reason for Change in Field Procedure or Analysis Variation:

Alpha Analytical (Alpha) revised their alkylated PAH SOP to correct the method referenced in the SOP. Revision 4 of the SOP incorrectly referenced USEPA SW-846 8270D. The SOP was revised (Revision 5, dated 10/12/09) to correctly reference USEPA SW-846 8270C.

Variation from Field or Analytical Procedure:

Alpha is conducting USEPA Method SW-846 8270C rather than 8270D as consistent with the attached revised SOP (Revision 5, dated 10/12/09). The revised SOP also sets more stringent laboratory control spike (LCS) limits of 50-130% recovery than the LCS limits of 50-150% recovery referenced in Revision 4 of the SOP and detailed in Worksheet Nos. 12 and 28 of the Fish/Decapod QAPP. The revised SOP (Attachment T26) is attached to this protocol modification form.

Special Equipment, Materials or Personnel Required: None.

Initiator's Name:	DOUL.	Date:	12/3/09
Project Manager:	Tion Solm	Date:	12/3/09
	Tad Kleshler	 Date:	12/3/09
USEPA Authority:		Date:	

Analysis of Parent and Alkylated Polynuclear Aromatic Hydrocarbons, Selected Heterocyclic Compounds, Sterancs, Triterpanes and Triaromatic Steroids by GC / MS - SIM

1.0 Identification of Test Method

This standard operating procedure (SOP) is based on the following analytical test methods:

- USEPA, Method 8270C Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS)" in <u>Test Methods for Evaluating Solid Waste</u>, SW846, Third Edition (USEPA Office of Solid Waste and Emergency Response, Washington, DC, September 1994).
- 1.2 Federal Register 2003, 40 CFR, Chapter 1 EPA. Part 300: National Oil and Hazardous Substances Pollution Contingency Plan, Appendix C to Part 300, Chemical Analysis of Oil Composition, May 28, 2003.

2.0 Applicable Matrix or Matrices

2.1 This standard operating procedure (SOP) describes a method for analyzing sample extracts for parent and alkylated polynuclear aromatic hydrocarbons (PAHs), selected heterocyclic compounds, Steranes, Triterpanes, and Triaromatic Steroids by gas chromatography / mass spectrometry with selected ion monitoring (GC/MS-SIM). This method is appropriate for determining these compounds in the extracts of water, soil, sediment, tissue, mousses, sludges and petroleum products.

	Approval Signatures	1
Laboratory Director	frank Start	Dale: 10 12 09
Section Supervisor	Gulla Pola	Date: 10/12/09
Quality Assurance Officer	Jane P. Todas	Date: 10/12/09

This SOP is printed from an electronic file. A signed original is available in the files of Alpha Analytical Lab

3.0 Detection and Quantitation Limits

- 3.1 Method Detection Limits (MDLs) are determined as described in Alpha Analytical SOP# 08-05. MDLs are performed annually or if there is a major change in instrumentation or method procedure.
- 3.2 The Practical Quantitation Limit (PQL) or Reporting Limit (RL) is equivalent to the lowest standard concentration, analyzed with and included in the initial calibration curve. For most organic analyses, the PQL or RL is equivalent to 3 to 5 times the determined MDL.

4.0 Scope and Application

- 4.1 This method is applicable to the analysis of sample extracts for parent and alkylated polynuclear aromatic hydrocarbons (PAHs), selected heterocyclic compounds, steranes, triterpanes and triaromatic steroids by gas chromatography / mass spectrometry with selected ion monitoring (GC/MS-SIM). Target analytes listed in Tables IA and IB are determined and measured in the concentration range of 10 to 10,000 parts per trillion (ng/L) for water samples, and 1 to 1,000 parts per billion (ug/Kg) for soil, sediment and tissue samples, and 2 to 2,000 parts per million (mg/Kg) in petroleum product samples. Analytes detected over these ranges will be diluted and re-analyzed for accurate quantitation. Lower detection limits can be achieved if large volume injection (LVI, from 1uL to 50uL volume injections) techniques are employed. This technique requires Client and project specific requests.
- 4.2 This method is intended to assist in the identification or "fingerprinting" of source material against a potentially contaminated site and can also provide information to assist in the identification of petrogenic or pyrogenic contamination.

5.0 Summary of Method

- 5.1 An aliquot of a well mixed, homogeneous aqueous, solid, tissue or petroleum sample is accurately measured or weighed for sample preparation. Generally, 1L of water sample, 15-30g of soil, sediment or tissue sample, and 0.1g of petroleum sample. Please refer to the appropriate Alpha Analytical SOPs for extraction methods and sample preparation information:
 - *Method 3510C Extraction of Water Samples by Separatory Funnel* (OP-001),
 - Tissue Preparation and Homogenization (OP-003) and Tissue Extraction by Tissuemizer Probe (OP-019)
 - *Shaker Table Extraction* (OP-013)
 - Waste Dilution and Oily Material Preparation (O-018)
 - *Gravimetric Determination* (OP-017)

Water, soil/sediment, tissue and petroleum samples are spiked with surrogate compounds and extracted using methylene chloride. Sample extracts are concentrated and preliminarily screened for oil content following Alpha Analytical SOP *Gravimetric Determination* (OP-017). Gravimetric screening is essential at times to ensure the analytical equipment, as well as the cleanup columns, are not overloaded with oil laden samples. Samples may be cleaned by *Alumina Column Cleanup* (OP-009), or they may then be exchanged into hexane for optional cleanup and/or fractionation into saturated (F1) and aromatic (F2) fractions prior to analysis. See the SOP *Silica Fractionation and Cleanup* (NF02-001) for additional sample cleanup information and details.

5.2 After cleanup, the extracts are concentrated to an appropriate final volume based on oil content as determined by gravimetric weighing, spiked with internal standards, and analyzed by GC/MS-SIM. Analytes are introduced into the GC/MS by injecting a known volume of the calibration standards, quality control samples, and sample extracts into the GC equipped with a narrow-bore capillary column. The GC column is temperature programmed to separate the analytes, which are then detected with a mass spectrometer operating in the selective ion mode. Identification of target analytes is accomplished by comparing retention times and mass spectra with the retention times and electron impact spectra of the calibration standards. Concentrations are determined using mean relative response factors from a multi-level calibration curve. Response factors for target analytes and surrogate compounds are determined relative to the internal standards. Multi-component analytes (alkylated PAHs) are assigned the response factors of their unsubstituted, parent compounds. Sterane compounds are assigned the response factor of the compound 5B(H)-Cholane. Triterpane compounds are assigned the response factor of the compound 17A(H), 21B(H)-Hopane.

6.0 Definitions

Accuracy

A determination of how close a measured value is to a known true value, usually measured as the percent recovery of a spike analysis.

Aliquot

A measured portion of a sample taken for analysis.

Analyte

The chemical element or compound an analyst seeks to determine; the chemical element of interest.

Analytical Batch

The basic unit for analytical quality control, defined as samples that are analyzed together with the same method sequence and the same lots of reagents and with the manipulations common to each sample within the same time period or in continuous sequential time periods. Samples in each batch should be of similar composition (e.g., groundwater, sludge, and ash).

Analytical Sample

Any solution or media introduced into an instrument, on which an analysis is performed, excluding instrument calibration, initial calibration verification and continuing calibration verification. The following are all analytical samples: undiluted and diluted samples, predigestion spike samples, duplicate samples, serial dilution samplers, analytical spike samples, postdigestion spike samples, interference check samples, laboratory control sample, preparation blank, and linear range analysis sample (LRS).

Area

A term used in gas chromatography that indicates the peak area of a compound exiting a chromatographic column. The size or area of the peak is proportional to the amount of analyte in the sample.

Assessment

The evaluation process used to measure the performance or effectiveness of a system and its elements. Assessment is used as an all-inclusive term to denote any of the following: performance, systems, data and compliance audits, management systems reviews, peer reviews, inspections, or spot assessments.

Audit

A planned and documented investigative evaluation of an item or process to determine its adequacy and effectiveness as well as compliance with established procedures.

Background Correction

A technique usually employed relative to metals analysis, which compensates for variable background contribution to the instrument signal in the determination of trace elements.

Bias

A systematic (consistent) error in test results. Bias is expressed as the difference between the population mean and the true or reference value, or as estimated from sample statistics, the difference between the sample average and the reference value.

Blank

An artificial sample designed to monitor the introduction of artifacts into the measurement process. For aqueous samples, reagent water is used as a blank matrix. A universal matrix does not exist for solid samples; therefore, no matrix is routinely used. There are several types of blanks, which monitor a variety of processes: - A method blank is taken through sample preparation and analysis only. It is a test for contamination in the laboratory procedure. - \underline{A} storage blank is stored and analyzed with samples at the laboratory. It is a test for contamination in sample storage as well as sample preparation and analysis. - \underline{A} trip blank is shipped to and from the field with the sample containers. It is not opened in the field and, therefore, provides a test for contamination from sample preservation, site conditions, and transport as well as sample storage, preparation, and analysis. It is most commonly used for volatile organics. - \underline{A} field blank

is opened in the field and tests for contamination from the atmosphere as well as those activities listed under *trip blank*.

Blind Performance Evaluation Sample

A sample either submitted to the laboratory or prepared in the laboratory whereby the concentrations of parameters of concern are known by the preparer and not by the laboratory.

BNA

Base, neutral and acid extractable compounds. The terms base, neutral and acid refer to the pH condition of the sample undergoing extraction. Certain compounds extract more efficiently from water under acidic or basic conditions.

Calibration

The systematic determination of the relationship of the response of the measurement system to the concentration of the analyte of interest. Instrument calibration performed before any samples are analyzed is called the initial calibration. Subsequent checks on the instrument calibration performed throughout analysis are called continuing calibration. Calibration is also the act of making a scheduled comparison of instrument performance against national standards for instruments which measure physical parameters such as mass, time, and temperature.

Calibration Curve

The graphical relationship between the known values for a series of calibration standards and instrument responses.

Calibration Factor (CF) (Also see RF and RRF)

The ratio of the instrument response of an analyte to the amount injected. CFs are used in external standard calibrations.

Calibration Standard

A material used to quantitate the relationship between the output of a sensor and a property to be measured. Calibration standards should be traceable to Standard Reference Materials (provided by NIST, EPA, or other recognized standards agencies) or a primary standard.

Capillary Column GC

A GC technique that uses a very long (30-60m) small id (0.2mm) glass column instead of the traditional packed GC column (1.8M by 2mm) for separation of chemicals.

CERCLA

The Comprehensive Environmental Response, Compensation and Liability Act, also known as 'Superfund'. Enacted December 11, 1980, CERCLA provides for identification and cleanup of hazardous materials released over the land and into the air, waterways and groundwater. It covers areas affected by newly released materials and older leaking or abandoned dump sites. CERCLA established the Superfund, a trust fund, to help pay for cleanup of hazardous materials sites. The EPA has authority to collect cleanup costs from those who release the waste material. Cleanup

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funds come from fines and penalties, from taxes on chemical/petrochemical feed stocks, and the U.S. Department of the Treasury.

Certified Reference Material

A reference material accompanied by a certificate issued by an organization certifying the contents and concentration(s) of the material. (See also Standard Reference Material.)

Chain of Custody

Procedures and associated documents designed to trace the custody of a sample from the point of origin to final disposition, with the intent of legally demonstrating that custody remained intact and that tampering or substitutions were precluded.

Chromatogram

A graph representing the signal output of an instrument (GC or HPLC) which can be used to identify organic chemicals by peak retention time (RT) and to quantitate by peak size.

Clean Water Act (CWA)

Regulates the discharge of nontoxic and toxic pollutants into surface waters. The CWA became effective November 18, 1972, and has been amended significantly since then. Its ultimate goal is to eliminate all discharges into surface waters. EPA sets guidelines and state agencies issue permits (e.g., National Pollutant Discharge Elimination System permits) specifying the types of control equipment and allowable discharges for each facility.

Code of Federal Regulations (CFR)

A collection of the federal regulations established by law and published by the Government Printing Office. Environmental regulations are codified in Title 40 of the CFR.

Coefficient of Variation (Relative Standard Deviation)

A measure of precision (relative dispersion). It is equal to the standard deviation divided by the mean and multiplied by 100 to give a percentage value.

Co-elution

When two organics determined by GC give the same retention time (RT) and cannot be differentiated.

Comparability

Expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is assured through the use of established and approved analytical methods, consistency in the basis of analysis (wet weight, volume, etc.) and consistency in reporting units (ppm, ppb, etc.).

Completeness

The amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under correct normal operations. It is usually expressed as a percentage.

Composite

A sample composed of two or more increments.

Concentration

The amount of chemical (analyte) present per amount of sample. For trace analyses, usually expressed as ppm, ppb, or ppt.

Confirmation

In gas chromatography, an unknown compound in a sample is identified on the basis of its retention time on a specific chromatographic column. Because several compounds may exhibit the same retention time on a given column, a secondary confirmation on a different column or detector is often recommended for additional confidence in the compound identification. This additional confirmation is often referred to as "dual-column" or "second-column" confirmation.

Contract Laboratory Program (CLP)

A program coordinated through the EPA to provide a wide range of analytical services by commercial laboratories in support of investigation, remediation, and enforcement actions at Superfund sites. Laboratories participating in this program are under contract to the EPA and must follow very specific analytical protocols during analyses and data delivery, as specified in the Statement of Work associated with the contract.

Control Chart

A graphical representation of analytical accuracy. Displays the arithmetic mean of a data set, the upper and lower warning limits and the upper and lower control limits.

Corrective Action

A measure taken to rectify conditions adverse to quality and, where necessary, to preclude their recurrence.

Correlation Coefficient

The correlation coefficient is a determination of how closely data "fits" a straight line. It is a number between -1 and 1 that indicates the degree of linear relationship between two sets of numbers.

Data Quality Objective (DQO)

During the planning phase of a project requiring laboratory support, the data user must establish the quality of data required from the investigation. Such statements of data quality are known as DQOs. Qualitative and quantitative statements about the data required to support specific decisions or regulatory actions, DQOs must take into account sampling considerations as well as analytical protocols.

Data Validation

See Validation.

Decafluorotriphenylphosphine (DFTPP)

An organic compound utilized in several GC/MS methods to establish proper mass spectral instrument performance for semi-volatile analyses.

Degrees of Freedom

The number of independent deviations used in calculating an estimate of the standard deviation.

Dissolved Solids

Disintegrated organic and inorganic material contained in water. Excessive amounts make water unfit to drink or use in industrial processes.

Double Blind Performance Evaluation

A sample that contains select parameters at defined levels. The levels are unknown to the laboratory. The laboratory is also unaware that the sample is a performance evaluation sample.

Dry Weight

The weight of a sample based on percent solids. Also, the weight of a sample after drying in an oven at a specified temperature.

Effluent

Treated or untreated wastewater that flows out of a treatment plant, sewer or industrial outfall. Generally refers to wastes that are discharged into surface waters and are regulated under the Clean Water Act. Effluent limitations are restrictions on quantities, rates and concentrations of wastewater discharges that are established by a state or EPA.

External Standards

A method of quantifying chromatographic data in which standards of known concentrations are analyzed prior to unknown samples. The chromatographic peak area (or height) of a sample component is compared to a calibration curve of a peak area constructed from the standard data for that component. This comparison allows the concentration of the component in the sample to be determined.

Extract

The solution (liquid) remaining after a sample has been contacted with an aqueous solution (for inorganics) or an organic solvent (for organics). The extract, containing the chemical of interest, is then processed and analyzed by AA, ICP, or wet chemical techniques (inorganics and metals) or by GC/MS, or HPLC (organics).

Extractables

Organic chemicals which generally contain six to thirty carbon atoms and are amenable to GC, GC/MS, or HPLC analysis. (Also called Semi-Volatile Organics).

Extraction

The process of isolating chemicals of interest from a sample matrix (e.g., water, soil) when the sample cannot be analyzed directly.

Error

The difference between an observed or measured value and its true value.

False Negative Result

A term used to describe a result that was incorrectly reported as "not detected".

False Positive Result

A term used to describe a result that was incorrectly reported as present. False positives can be checked by analyzing blanks.

Field Blank

A blank that is prepared and handled in the field and analyzed in the same manner as its corresponding client samples.

Field Screening

An investigative technique utilizing analytical chemistry at or near a work site to rapidly determine the presence or absence of environmental contaminants and/or the approximate concentrations of a specific target of compounds.

Finding

An event discovered during an audit which, if continued, is sufficient to render the quality of an item unacceptable or indeterminate.

Flame Ionization Detector (FID)

A gas chromatography detector in which the column effluent gas is mixed with hydrogen and burned in air or oxygen. The ions and electrons produced in the flame generate an electric current proportional to the amount of material in the detector. The FID responds to nearly all organic compounds, but it does not respond to air and water, which makes it exceptionally suited to environmental analysis.

Flash Point

The lowest temperature at which a flammable liquid gives off sufficient vapor to form an ignitable mixture with air near its surface or within a vessel. Combustion does not continue. Used to characterize a waste as hazardous or non-hazardous in terms of flammability.

Full Scan

The process of monitoring all of the ions formed when a molecule is bombarded with electrons in the mass spectrometer.

Gas Chromatography (GC)

A technique for detecting organic compounds by using their physical and chemical properties to separate a mixture. The compounds are identified and quantified with various types of detectors

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as they exit the chromatograph. Selection of detectors is dependent on the particular compounds of interest.

GC/ECD

A GC with a detector (Electron Capture) selective for halogenated organic chemicals (usually chlorinated pesticides and PCBs), used in Methods 608, 8081, 8082.

Gas Chromatography/Mass Spectrometry (GC/MS)

A technique in which sample analytes are bombarded with electrons as they exit a gas chromatographic column and are fragmented into characteristic ion patterns. The mass spectrometer is the detector. It can determine which fragments are present and therefore the identity of the compounds.

GC/N/P

A GC with a detector (N/P) selective for organic chemicals which contain nitrogen and phosphorus usually organophosphorous or triazine pesticides). Also referred to as GC/TSD (Thermionic Specific Detector).

GC/PID

A GC with a detector (Photo Ionization) selective for aromatic hydrocarbons.

Gravimetric

Analyses based on the direct or indirect weighing of the analyte in question. This technique usually requires the use of an analytical balance with a sensitivity of 0.1 mg or better.

Hazardous Waste

Waste regulated under RCRA that can pose a substantial or potential hazard to human health or the environment when improperly managed. Such wastes possess at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity) or appear on special hazardous waste lists. The term is not interchangeable with hazardous substance or material.

Headspace

Any area in a container not completely filled by the sample in which gases can collect.

High Resolution GC/MS (HR/GC/MS)

A GC/MS that uses both an electromagnet and permanent magnet to detect ions produced by the ion source. By using both magnets in series, very small differences in mass (0.003) can be detected. This type of instrument is most frequently used where extremely low (ppq) detection limits are important, such as analyses for dioxins and furans.

Holding Time

The storage time allowed between sample collection and sample analysis when the designated preservation and storage techniques are employed.

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High Performance Liquid Chromatography (HPLC)

A chromatograph that is used to qualitatively and quantitatively identify organic chemicals, particularly those which are not amenable to GC techniques because of thermal instability.

Hydrocarbons

Chemical compounds that consist entirely of carbon and hydrogen.

Initial Calibration

Analysis of a series of analytical standards at different specified concentrations; used to define the linearity and dynamic range of the response of an instrument to the target compounds prior to the analysis of samples.

Instrument Detection Limit (IDL)

The smallest concentration or amount an instrument can reliably detect.

Instrument Tuning

A technique used in GC/MS procedures to verify that the instrument is properly calibrated to produce reliable mass spectral information.

Internal Standards (IS)

A compound added to every sample or sample extract at a known concentration prior to analysis for the purpose of quantitation.

Injection

Process of introducing a portion of a sample extract into a GC, GC/MS, or HPLC.

Isomers

Chemical compounds with the same molecular weight and atomic composition but differing molecular structure, e.g., n-pentane and 2-methylbutane.

Limit of Quantification (LOQ)

The minimal signal level required to quantitate a specific analyte by a specific procedure at the desired confidence level.

Library Search

A technique in which an unknown mass spectrum of a compound is compared to the mass spectra of compounds contained in a computer library in an effort to identify the compound. Compounds identified in this manner are referred to as tentatively identified compounds (TICs).

Linear Regression

A statistical method for finding a straight line that best fits a set of two or more data points, thus providing a relationship between two or more variables.

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Listed Waste

Any waste listed as hazardous under the Resource Conservation and Recovery Act, but which has not been subjected to the Toxic Characteristics Listing Process because the dangers it presents are considered self-evident.

Log-In

The receipt and initial management of an environmental sample. It generally includes identifying who sent the sample; maintaining chain-of-custody; checking report and invoice information; recording analyses requested, including methodology and special instructions; and assigning a discreet in-lab identification, usually a number or bar code.

Mass Chromatogram

The plot of selected ions versus time. The areas under the curves are proportional to the amounts of each compound detected.

Mass Spectrum

A bar graph showing the relative abundance of the ions produced when sample molecules are bombarded by electrons in a mass spectrometer.

Material Safety Data Sheet (MSDS)

A compilation of information required under the OSHA Communication Standard on the identity of hazardous chemicals and their associated health and physical hazards, exposure limits and precautions.

Matrix

The component or substrate which contains the analyte(s) of interest. Examples of matrices are water, soil, sediment, and air. Matrix is not synonymous with phase (liquid or solid).

Matrix Effect

An interference in the measurement of analyte(s) in a sample that is caused by materials in the sample. Matrix effects may cause elevated reporting limits or may prevent the acquisition of acceptable results.

Matrix Modifiers

Chemicals added to samples for metals analysis, which are used to lessen the effects of chemical interferents, viscosity, and surface tension.

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Matrix Spike (MS)

An aliquot of a matrix fortified sample spiked with known quantities of specific compounds and subjected to an entire analytical procedure. The percent recovery for the respective compound(s) is a measure of accuracy.

Matrix Spike Duplicate (MSD)

A second aliquot of the same matrix as the matrix spike (above) that is spiked in order to determine the precision of the method.

Maximum Contaminant Level (MCL)

The maximum permissible level of a contaminant in water delivered to any user of a public water system. MCLs are enforceable standards.

Mean

The average of a set of values.

Measurement

The process or operation of ascertaining the extent, degree, quantity, dimensions, or capability with respect to a standard.

Median

The middle value of a set of data when the data set is ranked in increasing or decreasing order.

Method Blank

An analytical control consisting of all reagents, which may include internal standards and surrogate standards, that is carried through the entire analytical procedure. The method bland is used to define the level of laboratory background contamination. Examples of method blanks are a volume of deionized or distilled laboratory water for water samples, a purified solid matrix for soil/sediment samples, or a generated zero air.

Method Detection Limit (MDL)

The minimum concentration of an analyte that, in a given matrix and with a specific method, can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero.

Narrative

In an analytical report, a descriptive documentation of any problems encountered in processing the samples, along with corrective action taken and problem resolution.

National Pollutant Discharge Elimination System (NPDES)

A provision of the Clean Water Act that prohibits discharge of pollutants into waters within the U.S. unless a special permit is issued by EPA, a state (where delegated), or a tribal government on an Indian reservation.

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Nutrient

Any substance assimilated by living a thing that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.

Organics

Chemicals which contain the element carbon. Pesticides, priority pollutants, etc., belong to this class, (See Inorganics).

Outlier

A result excluded from the statistical calculations due to being deemed "suspicious" when applying the "Grubbs Test" (or equivalent).

PAHs (PNAs)

Polyaromatic hydrocarbons, also called PNAs (polynuclear aromatics). A class of hydrocarbons that contain fused benzene rings. In the Air program, these compounds are frequently referred to as Polycyclic Organic Matter (POM).

PCBs

Polychlorinated biphenyls. A class of chlorinated organic mixtures primarily previously used as insulator fluid in transformers. The four most common mixtures are called Aroclors 1242, 1248, 1254, and 1260. These designations represent the number of carbon atoms (12) and percent weight chlorine (e.g., 42). Sale of PCBs for new uses was banned by law in 1979.

Percent Difference

When two independent measurements of the same characteristics are available, it is possible to use the percent difference instead of the coefficient of variation to measure precision.

Performance Evaluation (PE)

A type of audit in which a known or characterized value is compared to the result obtained through the routine analysis of a "PE" sample in the laboratory to evaluate the proficiency of an analyst or laboratory.

Performance Evaluation (PE) Sample

A sample of known composition (unknown to the laboratory), provided by an external source (e.g., EPA), which is used to evaluate lab performance.

Periodic Calibration

A calibration that is performed at prescribed intervals for equipment such a balances, thermometers, and balance weights. In general, they are performed on equipment that are distinct, singular purpose units, and are relatively stable in performance.

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Percent Recovery

A measure of accuracy determined from the comparison of a reported spike value to its true spike concentration.

Pesticide

Any chemical used to control or eradicate a pest. Subclasses include insecticides (e.g., DDT for insects), herbicides, (e.g., atrazine for weeds), fungicides (e.g., captan for fungi), nematocides (e.g., DBCP for nematodes), etc.

Petroleum Hydrocarbon Fingerprinting

A technique for identifying sources of petroleum products.

pН

A scale of acidity/alkalinity running from 1.0 to 14. Low values (1-5) represent high acidity, middle values (5-8) neutrality and high values (9-14) high alkalinity.

Pollutant

Generally, any substance introduced into the environment that adversely affects the usefulness of a resource.

ppb

Part-per-billion. A unit of measurement that expresses the amount of chemical present ('part') per the amount of sample analyzed ('billion'). For example, a 'ng' (nanogram or one billionth of a gram) per 'g' (gram) of sample is 1 ppb. More common units are ug/Kg (micrograms per kilogram for solids) and ug/L (micrograms per liter for liquids).

ppm

Part-per-million. A unit of measurement which expresses the amount of chemical present ('part') per the amount of sample analyzed ('million'). For example, a 'ug' (microgram or one millionth of a gram) per 'g' (gram) of sample is 1 ppm. More common units are mg/Kg (milligrams per kilogram for solids) and mg/L (micrograms per liter for liquids).

Practical Quantitation Limit (PQL)

The lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Precision

The reproducibility of an analytical technique, usually measured by analysis of duplicates or duplicate spikes. Precision is usually expressed in terms of relative standard deviation or relative percent difference, but can be expressed in terms of the variance, range, or other statistic.

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Preservative

A chemical or reagent added to a sample to prevent or slow decomposition or degradation of a target analyte or a physical process. Physical and chemical preservation may be used in tandem to prevent simple deterioration.

Priority Pollutants

A set of organic and inorganic chemicals identified by EPA as indicators of environmental contamination. A priority pollutant analysis is usually done on wastewater to obtain a discharge permit. See Part 122.

Proficiency Test

See Performance Evaluation.

Qualitative Analysis

An analysis that focuses primarily on the identification of chemicals present in a sample.

Quality Assurance (QA)

An organized program designed to assure that laboratory quality control procedures are appropriate and demonstrate date quality. All those planned and systematic actions necessary to provide adequate confidence in results.

Quality Assurance Program Plan (QAPP)

A written assembly of management policies, objectives, principles, and general procedures that outlines how the laboratory intends to generate data of known and acceptable quality.

Quality Assurance Project Plan (QAPJP)

A written document that presents in specific terms the policies, organization, objectives, functional activities and specific quality assurance/quality control (QA/QC) activities designed to achieve the data quality objectives of a specific project. There are 16 essential elements that EPA has mandated be addressed in a project plan.

Quality Control (QC)

The physical procedures within the laboratory used to assess the quality of data (e.g., spikes, blanks, duplicates, calibration, etc).

Quantitative Analysis

An analysis that focuses primarily on the measurement of the amount of specific analyte(s) present in a sample.

Raw Data

All documentation associated with the original recording of analytical results pertinent to a specific sample or set of samples. This may include laboratory worksheets, calculation forms, instrument-generated output, analyst notes, etc., from sample receipt through final reporting.

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Reconstructed Ion Chromatogram (RIC)

The response of the total ions detected versus time. A term applicable only to GC/MS.

Reference Method

Statistic for evaluating the precision of a replicate set.

Reference Standard

A chemical of known purity used as a reference ('standard') for the calculation of an analytical result.

Relative Percent Difference (RPD)

Statistic for evaluating the precision of a replicate set.

Relative Response Factor (RRF)

A measure of the relative response of a compound compared to its internal standard. RRFs are determined by analysis of standards and are used in the calculation of concentrations of analytes in samples.

Relative Standard Deviation

See Coefficient of Variation.

Resolution

The degree of separation between peaks eluting from a chromatographic column. Sufficient resolution between peaks is required for proper quantitation of unknown analytes.

Resource Conservation and Recovery Act (RCRA)

A federal law that established a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing, of hazardous substances. RCRA is designed to prevent new and uncontrolled hazardous waste sites.

Response Factor (RF)

A factor derived from the calibration of a compound that is used in the quantitation calculation of sample analytes. A response factor may be derived from an external standard calibration (then called a Calibration Factor) or from an internal standard calibration (then called a Relative Response Factor).

Retention Time

A term used in gas and liquid chromatography describing the time elapsed from sample injection until the specific compound elutes or exits the chromatographic column at the detector. Each compound has a characteristic retention time on a specific column; therefore, this information is used to qualitatively identify the compounds in the sample.

Relative Retention Time (RRT)

Used to code GC peaks by calculating the ratio between the RT of a GC peak and the RT of a reference peak.

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Selected Ion Monitoring (SIM)

A technique in which one or more specific ions are monitored. Because only specific ions are monitored, selected ion monitoring generally provides higher sensitivity than a full scan monitoring. A term applicable only to GC/MS.

Semi-Volatile Organics

Organic chemicals which generally contain six to thirty carbon atoms and are amenable to GC, GC/MS or HPLC analysis. (See Extractables).

Solid Waste

Nonliquid, nonsoluble materials, ranging from municipal garbage to industrial wastes, that contain complex, and sometimes hazardous, substances. Solid wastes include sewage, sludge, agricultural refuse, demolition wastes, mining residues, and even liquids, and gases in containers.

Solvent

A substance, usually liquid, capable of dissolving or dispersing one or more other substances.

Standard Operating Procedure (SOP)

A detailed written description of how a laboratory executes a particular procedure or method, intended to standardize its performance.

Standard Reference Material (SRM)

A material of which certain properties have been certified by the National Institute of Standards and Technology (NIST).

Stock Solution

A concentrated solution of analyte(s) or reagent(s) prepared and verified by prescribed procedure(s), and used for preparing working standards or standard solutions.

Subsample

A portion taken from a sample. A laboratory sample may be a subsample of a gross sample; similarly, test portion may be a subsample of a laboratory sample.

Superfund

The Response Trust Fund, established by CERCLA as a mechanism for the federal government to take emergency or remedial action to clean up both abandoned and existing disposal sites when there is a release, or potential threat of a release, of a hazardous substance presenting imminent and substantial danger to public health and welfare. See CERCLA.

Surrogate

Compounds that are added to every blank, sample, LCS, matrix spike, matrix spike duplicate, and standard for most organic analyses. They are used to evaluate analytical efficiency by measuring recovery. Surrogates include brominated, fluorinated, or isotopically labeled compounds that are not expected to be detected in environmental samples.

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Systems Audit

A systematic on-site qualitative review of facilities, equipment, training, procedures, record keeping, data verification, and reporting aspects of a quality assurance system to arrive at a measure of the capability of the system.

Target Compound List (TCL)

A list of organic compounds that are determined during Superfund site remediations. Created by EPA for use in the Contract Laboratory Program, this list was formerly referred to as the Hazardous Substance List (HSL).

Target Compounds

Specific compounds that are to be quantified in a sample, based on a standard list of potential compounds.

Tentatively Identified Compounds (TICs)

Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds or surrogates. TICs usually consist of up to 30 peaks that are greater than 10% of the peak areas, or heights, of the nearest internal standard. They are subjected to mass spectral library searches for tentative identification.

Traceability

The ability of an analytical standard material used for instrument calibration purposes to be traced to its source. The standards must be traceable via written documentation to sources which produce or sell verified or certified standards, i.e., National Institute for Standards and Technology, USEPA, or vendors preparing standards from those sources which they have certified

Trip Blank

A sample, usually pure water prepared in the lab, which is taken to the sampling site and then returned with the collected samples. Later analysis will indicate any false positive results in the real samples arising from contamination during shipment.

Validation

A systematic effort to review data for identification of errors, and thereby deleting or flagging suspect values to assure the validity of the data for the user. This process may be done by manual or computer methods.

Verification

The process of reviewing data to ensure that data reduction has been correctly performed and that analytical results to be reported correspond to the data acquired and processed.

Volatile Organics

Organic chemicals which generally contain one to six atoms and are amenable to analysis by the purge/trap technique because of their high vapor pressures. (See Semi-Volatile Organics).

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7.0 Interferences and Pretreatments

- 7.1 Contaminants in solvents, reagents, glassware, and other sample processing hardware may cause inferences that lead to discrete artifacts and/or elevated baselines in the ion current profiles. Demonstrate that all of these materials are free from interferences under the conditions of the preparation and analysis by extracting and analyzing a laboratory method blank with each batch of up to 20 samples.
- 7.2 Contaminants coextracted from the sample may cause matrix interferences. The extent of matrix interferences will vary considerably from sample to sample, depending upon the nature of the environment being investigated. An interference which is unique to SIM techniques can arise from the presence of a coeluting compound which contains the quantification mass ion. This event results in a positive interference to the reported value for the compound of interest. This interference is controlled to some degree by acquiring data for a confirmation ion. If the ion ratios between the quantification ion and the confirmation ion are not within the specified limits, then interferences may be present. Quantification and confirmation ions should agree within +/- 20% of the calibration standard ion ratios. However, the stability of confirmatory/primary ion abundance ratios may decrease as the IDL is approached. Analysts must apply judgment in evaluating apparent interferences.
- 7.3 The presence of a large amount of a single alkyl homolog group without the presense of the other related groups may be indicative of an interference. For example, the presence of an apparent C_2 Naphthalenes in the absence of C_1 Naphthalenes or C_3 Naphthalenes may be an analytical interference. The analyst should use the spectrum ions and pattern recognition when determining whether to select a homolog group.

8.0 Health and Safety

- 8.1 All relevant Material Safety Data Sheets (MSDSs) are kept alphabetically in the centrally located file storage. Alternatively, go to http://alphanet.alphalab.com/alphaweb/ where MSDSs and Health and Safety information can be found.
- 8.2 All company safety practices shall be followed as written in the Alpha Analytical *Chemical Hygiene Plan.* (See intranet address above.)

9.0 Equipment and Supplies

If performing any maintenance on any piece of equipment, other then routine daily maintenance, it must be documented in the *Instrument Maintenance Logbook* located in the laboratory specific to each instrument. Specific instrumentation service contracts or warrantees differ from each instrument. See the Section Supervisor for specific instrument details.

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- 9.1 Gas Chromatograph Model Agilent/HP6890 or equivalent. The instrumentation includes a temperature-programmable gas chromatograph and all required accessories including syringes, analytical columns, and gases. The injection port is designed for split or splitless injection onto a capillary column. The injection port includes a Phenomenex drilled uniliner with a hole on the top and contains a small plug of silanized glass wool. The injector port will require maintenance on an as needed basis if degradation or contamination is apparent. Please refer to the front of the *Instrument Maintenance Logbook*, which outlines the routine maintenance procedures.
- 9.2 Large volume injector, ATAS OPTIC 2 or APEX ProSep 800 Plus XT, or equivalent Capable of injecting one to fifty microliters of standards and extracts onto the GC column. This equipment is optional, and is only employed if client or project specifications request. Standard Agilent/HP 7683 microliter autosamplers are typically employed. See Section 9.5.
- 9.3 Column Restek or Phenomenex 60-m x 0.25 mm ID, 0.25 um film thickness, fused-silica capillary column with RTX-5 or ZB-5 bonded phase, or equivalent.
- 9.4 Mass Spectrometer Agilent/HP5973, or equivalent. The mass spectrometer must operate at 70ev (nominal) electron energy in the electron impact ionization mode and be tuned to optimize the sensitivity of the instrument to the mass range being monitored (30 550 amu). The GC capillary column is fed directly into the ion source of the mass spectrometer. The source will require cleaning and/or filament replacement on an as needed basis. Please refer to the instrument hardware manual for detailed procedures, located in the laboratory next to the instrument.
- 9.5 Auto sampler Agilent/HP 7683 series autosampler and tray, or equivalent.
- 9.6 Computer with Windows NT version 4.0 operating software utilizing Agilent/HP Enviroquant G1701BA Version B.01.00 software, or equivalent/higher versions.
- 9.7 Helium Ultra high purity grade (99.9999% pure).

10.0 Reagents and Standards

- 10.1 *Methylene Chloride*, ACS approved, Pesticide grade, see Alpha Analytical SOP Reagent, Solvent and Standard Control (G-008) for additional details regarding solvent purity.
- 10.2 *Hexane*, ACS approved, Pesticide grade, see Alpha Analytical SOP Reagent, Solvent and Standard Control (G-008) for additional details regarding solvent purity.
- 10.3 *Acetone*, ACS approved, Pesticide grade, see Alpha Analytical SOP Reagent, Solvent and Standard Control (G-008) for additional details regarding solvent purity.
- 10.4 *Methanol*, Purge and Trap grade, see Alpha Analytical SOP Reagent, Solvent and Standard Control (G-008) for additional details regarding solvent purity.

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10.5 *Custom Mix Calibration Standard* prepared by Supelco which contains the parent PAH and Heterocyclic compounds at 1000ug/mL.

- 10.6 5B(H)-Cholane (CAS# 80373-86-0) and 17A(H), 21B(H)-Hopane (CAS# 13849-96-2) obtained from Chiron AS Norway at 1000ug/mL. (These compounds are used for calibration and quantitation of all steranes, triterpanes and triaromatic steroids, and 5B(H)-Cholane is also used as a surrogate compound.)
- 10.7 Surrogates: 2-Methylnaphthalene-d10, Pyrene-d10, and Benzo(b)fluoranthene-d12 from Cambridge Isotope, neat. Prepare a stock surrogate solution for each by weighing 0.02g of neat surrogate into 10mL of Methylene Chloride for a concentration of 2000ug/mL. Take 500uL of each stock solution into 100mL for a low level spiking solution at 10ug/mL. Take 1250uL of each stock solution into 25mL for a high level spiking solution at 100ug/mL. These solutions must be assayed for use by analysis before release to the preparation lab. All compounds must be within 20% of their true value. 100uL of low solution or 200uL of high solution is spiked into each QC and field sample. This amount may be adjusted to meet project specific concentrations, as needed.
- 10.7.1 Biomarker surrogate: 5B(H)-Cholane from Chiron AS Norway solution at 1000ug/mL in iso-octane. Take 1,000uL of stock solution into 100mL for a low level spiking solution at 10ug/mL. Take 1000uL of stock solution into 10mL for a high level spiking solution at 100ug/mL. These solutions must be assayed for use by analysis before release to the preparation lab. All compounds must be within 20% of their true value. 200uL of low solution or high solution is spiked into each QC and field sample. This amount may be adjusted to meet project specific concentrations, as needed.
- 10.8 Internal Standards (IS): Acenaphthene-d10 and Chrysene-d12 from Cambridge Isotope, neat. Prepare two solutions by weighing 0.02g of neat internal standard into 10mL of Methylene Chloride for two 2000ug/mL stock solutions Prepare a 500ug/mL intermediate solution by spiking 6250uL into 25mL Methylene Chloride. Then prepare a working solution by adding 2000uL to 200mL for a 5ug/mL solution. 100uL is spiked into each 1mL of QC sample or field sample, for a concentration of 500ng/uL on column.
- 10.9 Laboratory Control Sample, Matrix Spike, and Matrix Spike Duplicate (LCS/MS/MSD):

 A solution of 17 priority pollutant parent PAH's from Restek, or equivalent, at 1000ug/mL. This solution is from a separate source than the calibration solutions. Prepare the spike mix by adding 250uL of the solution to 25mL of Methylene Chloride for a 10ug/mL LCS/MS/MSD spiking solution. The solution must be assayed for use by analysis before release to the preparation lab. All compounds must be within 20% of their true value. 100uL is spiked into the LCS and each designated MS/MSD field sample. This amount may be adjusted to meet project specific concentrations, as needed.
- 10.10 Alaska North Slope Crude Oil: Weigh approximately 0.5g neat oil, add 1.0mL each high surrogates and high biomarker surrogate, and 10mL internal standard mix into 100mL of

Methylene Chloride for a working solution of approximately 5mg/mL (with surrogates at 1.0ug/mL and internals at 0.5ug/mL).

- 10.11 *Independent Calibration Check:* Prepared as below in Section 10.13 at 0.5ug/mL, but from a different source, lot, or vendor. Independent Check analyses must agree within 20% of their true value.
- 10.12 SRM 1944 PAH's in sediment and SRM 1974a PAH's in Tissue, from the National Institute of Standards & Technology (NIST). Please refer to the individual certifications for the assigned true values. These SRMs may be extracted and analyzed with sample batches as part of the overall QC evaluation if requested by the client. Other certified SRMs may be used on a project specific basis.
- 10.13 Prepare the *Working Stock Standard* (all resulting concentrations at 20μg/mL) in 25mL of Methylene Chloride (CH₃Cl₂) as follows. (<u>Note:</u> The following is just one way an analyst may make up calibration standards. Limitations may exist that would cause the method to be adjusted. Problems with standard availability, solubility, or expiration may affect how the following 6 level calibration standards are prepared.)

Component	Volume Added	Final Volume in (CH ₃ Cl ₂)
Custom Supelco Mix	$500~\mu L$ of $1000~\mu g/m L$	25 mL
5B(H)-Cholane	$500~\mu L$ of $1000~\mu g/m L$	25 mL
17A(H), 21B(H)-Hopane	$500~\mu L$ of $1000~\mu g/m L$	25 mL
2-Methylnaphthalene-d10	$250~\mu L$ of $2000~\mu g/m L$	25 mL
Pyrene-d10	$250~\mu L$ of $2000~\mu g/m L$	25 mL
Benzo(b)Fluoranthene-d12	$250~\mu L$ of $2000~\mu g/m L$	25 mL

<u>6 Level Curve Preparation for Individual Components</u>

Calibration Level	Volume of Working Std. Added (20 ug/mL)	Volume of IS Stock	Final Volume in
Level 1 - 10 ng/mL	50 μL	<u>added</u> 10 mL	(CH ₃ Cl ₂) 100 mL
Level 2 - 25 ng/mL	125 μL	10 mL	100 mL
Level 3 - 100 ng/mL	500 μL	10 mL	100 mL
Level 4 – 500 ng/mL	2500 μL	10 mL	100 mL
Level 5 - 5,000 ng/mL	25 mL	10 mL	100 mL
Level 6 - 10,000 ng/mL	12.5 mL	2.5 mL	25 mL

Note: A minimum of a 5-level curve must be analyzed, but up to 7 levels may be analyzed and evaluated.

11.0 Sample Collection, Preservation, Shipment and Storage

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11.1 Sample collection is not applicable to the Alpha Analytical laboratory operation.

- 11.2 Please see the *Sample Management* SOP (G-005) that describes the responsibilities of sample custody including all proper documentation, verification, and tracking procedures following Chain of Custody (COC) protocols, sample receipt procedures using the *Sample Receipt Checklist*, which includes the check for proper sample preservation and cooler temperature verification. SOP G-005 also describes how samples are normally shipped or obtained by the laboratory, precautions to be used in opening sample shipments, and sample storage conditions.
- 11.3 Internal COC procedures for sample tracking include the use of sample tracking logbooks. These procedures are also described in the *Sample Management SOP* (G-005).
- 11.4 Aqueous samples should be collected in 1L or 2L amber glass bottles and stored without preservative at 4°C. Soil/sediment and tissue samples should be collected in glass soil jars and stored at 4°C, or if desired, frozen. The minimum amount of sample needed to reach the reporting limits in Section 23.0 for this method for aqueous samples is 1L, for solid and tissue matrices is 10-20 grams and for petroleum product samples is 0.1 grams. Additional sample is needed (approximately 3X the minimum amount) if MS/MSD analyses are to be performed.
- 11.5 The hold time for this method is 7 days for the extraction of aqueous samples and 14 days for the extraction of soil/sediment and tissue samples. There is no extraction holding time applied to petroleum product samples. If sediment or tissue samples are frozen, this suspends the holding time until removal from the freezer. All extracts must be analyzed within 40 days of the extraction date.

12.0 Quality Control

Quality Control (QC) samples are necessary to monitor both the sample extraction and instrument analysis procedures. The Quality Control samples described below are considered the method defaults, and are the minimum requirements, except were noted. Client and Project specific Data Quality Objectives (DQOs) supersede the requirements in this section where applicable. Client or Project specified DQOs shall be included, or referenced, in the final report to the client.

12.1 Method Blank

- 12.1.1 A method blank must be extracted (spiked with surrogates and internal standards) and analyzed once per every 20 samples or per extraction batch, whichever is more frequent.
- 12.1.2 Method Blanks should not contain any individual compound at or above the concentration of the reporting limit. If a blank does contain target compounds

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greater than the reporting limit, they should be less than 10% of any sample results for the same compound(s). If the blank does not meet the above criteria, all efforts must be made to identify and eliminate any source of contamination, and all samples associated with the contaminated blank should be re-extracted and reanalyzed.

12.2 Laboratory Control Sample (LCS)

- 12.2.1 The laboratory control sample (LCS) contains 17 priority pollutant parent PAH's and is from a second/separate source, to verify the accuracy of the calibration curve. The LCS is extracted along with the samples. An LCS must be extracted and analyzed once per every 20 samples or per extraction batch, whichever is more frequent.
- 12.2.2 The acceptable recovery QC limits are found in Section 18 for aqueous, solid, tissue, and product LCSs. All recovery limits are continuously monitored and documented in-house through control charts which are updated semi-annually. The Alpha Analytical SOP *Control Chart Generation* (G-013) provides details explaining how control charts are generated and used for quality control.
- 12.2.3 If the LCS does not meet the QC limits, check to see if an analytical or spiking error has occurred. If the LCS recovery is still out of control, re-extraction of the entire extraction set may be necessary. If the samples are also associated with a matrix spike and matrix spike duplicate that are in control, re-extraction may not be necessary, as this demonstrates an isolated problem pertaining to the LCS only.

12.3 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

- 12.3.1 Matrix spike and matrix spike duplicate analyses must be performed once per 20 samples per matrix (5% frequency).
- 12.3.2 The acceptable recovery and RPD QC limits are found in Section 18 for aqueous, solid, tissue, and product MS/MSD's. All recovery limits are continuously monitored and documented in-house through control charts which are updated semi-annually. The Alpha Analytical SOP *Control Chart Generation* (G-013) provides details explaining how control charts are generated and used for quality control.
- 12.3.3 If the MS/MSD do not meet the QC limits, check to see if an analytical or spiking error has occurred. If the recovery or RPD still exceeds the control limits, reextraction of the set may be necessary. If the associated LCS is within control, include a project narrative with the results to client noting that there may be matrix effects on the accuracy and/or precision of the affected results as evidenced by the matrix spike and matrix spike duplicate exceedence.

12.4 Matrix or Sample Duplicates

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12.4.1 Laboratory matrix or sample duplicates are analyzed if requested by the client. The QC limit is 30% RPD for target compounds found above 5 times the reporting limit.

12.4.2 If the %RPD exceeds the 30% control limit and the associated MS/MSD %RPD is within 30%, include a project narrative with the results to client noting that there may be potential matrix effects on the precision of the results isolated to this sample, as evidenced by the matrix duplicate exceedence and the MS/MSD acceptance. If both the sample/duplicate and the MS/MSD exceed the control limits, notify the Section Supervisor and/or the Laboratory Director, to decide if re-extraction of the set is necessary.

12.5 Surrogates

- 12.5.1 Surrogate recovery limits for all matrices can be found in Section 18. The recovery limits are continuously monitored and documented in-house through control charts which are updated semi-annually. The Alpha Analytical SOP *Control Chart Generation* (G-013) provides details explaining how control charts are generated and used for quality control.
- 12.5.2 If the surrogate does not fall within the QC limits, check to see if an analytical or dilution error occurred and re-calculate. If only one surrogate falls below the 50% recovery limit, but is above 10% recovery, the exceedence is noted, with approval of the Section Supervisor, and the results are reported to the client with a notation in the case narrative. If all surrogates are recovered below the 50% limit, reextract the sample and report the re-extract results along with the original results, if re-extraction occurred beyond the holding time, and the re-extract surrogates are within the QC limits. If the surrogates are recovered below 50% in the reextract, this confirms a suspected matrix interference on the surrogates, and only the original analysis needs to be reported. If the chromatogram shows obvious matrix interference, no re-analysis or re-extraction is necessary. This decision must be made with approval of the Section Supervisor. Surrogate outliers and sample re-extracts must be noted in the case narrative to the client.

12.6 Internal Standards

- 12.6.1 Internal standards are added to every field sample, QC sample, and method blank. The acceptance limits are 50-200% of the internal standard response (or area) of the daily continuing calibration verification standard.
- 12.6.2 <u>If the internal standard areas fall outside the QC limits, check to see if an analytical, dilution or spiking error occurred.</u>
 - If internal standards are low, reanalyze the extract.

- If internal standards are high, the extract may have concentrated while on the instrument, then:
- If no obvious interference is present, re-analyze the extract. If internal standards are now within the acceptance limits, report only the re-analysis, as long as the re-analysis occurred within the 40-day analytical hold time. If the re-analysis occurred outside of the 40-day analytical hold time, both the original and re-analysis must be reported. If the internal standards again are outside the acceptance limits, and either within or outside of the 40-day hold time, try re-analyzing at a 1:5 or greater dilution (see below).
- ✓ If the chromatogram shows obvious matrix interference that cannot be avoided when integrating, a re-analysis at a 1:5 or greater dilution may be helpful in minimizing the interference while ensuring better quantitation.
- Note any exceedence in the case narrative to the client.

12.7 Standard Reference Materials (SRM's)

- 12.7.1 Standard reference materials (SRM) are available from the National Institute of Standards and Technology (NIST) and are extracted and analyzed with samples on a project specific basis. These are not used as controls, but to evaluate potential matrix effects in associated samples for the target compounds being evaluated.
- 12.7.2 Acceptance criteria for SRM analysis will vary from project to project depending upon client data quality objectives (DQOs). Generally, ± 35% difference (%D) based on the true certified values of the target compounds of interest, or 65% 135% recovery, serve as advisory acceptance criteria.
- 12.7.3 <u>Corrective Action</u>: Repeat analysis and/or check to see if an analytical error has occurred. If the % recovery or %D still exceeds the control limits and the associated LCS and/or MS/MSD are within control, include a project narrative with the results to client noting that the observed recovered of the SRM are isolated to this sample as evidenced by the LCS and/or MS/MSD acceptance.

13.0 Calibration and Standardization

Prior to the analysis of any standards or samples, the instrument acquisition and process methods must be set up. This includes the GC run parameters and the SIM mode acquisition ion entries into the different SIM acquisition retention time windows. The mass spectrometer must be tuned to the meet the abundance criteria for PFTBA (then DFTPP if required per client request or project specific DQOs) and an initial calibration must be analyzed to establish linearity of the instrument.

13.1 PFTBA Manual Tuning

- 13.1.1 Prior to initial calibration, tune the mass spectrometer using PFTBA (Perfluorotributylamine calibration gas) to maximize the sensitivity of the instrument in the mass range of interest, 35-525 amu.
- 13.1.2 The following PFTBA mass intensity criteria must be met:

PFTBA Ion	Relative Abundance
m/e 69	Base Peak with > 100,000 counts
m/e 219	30% to 60% of Base Peak
m/e 502	5% to 11% of Base Peak

- 13.2 DFTPP Tuning *Only* performed on a project specific basis, if requested by the client, or included in a project specific Quality Assurance Plan (QAP) or Work Plan.
 - 13.2.1 Before the analytical standards are analyzed, the mass spectrometer must be evaluated for the proper ion criteria for DFTPP (decafluorotriphenylphosphene), if specifically requested by the client or included in a project specific QAP. Generally, 1uL of a 50 ng/mL solution is evaluated. A larger volume or lesser concentration may be evaluated if using large volume injections.
 - 13.2.2 The following DFTPP mass intensity criteria must be used:

DFTPP KEY MASSES AND ABUNDANCE CRITERIA

Mass	m/e Abundance criteria
51	30-60 percent of mass 198.
68	Less than 2 percent of mass 69.
70	Less than 2 percent of mass 69.
127	40-60 percent of mass 198.
197	Less than 1 percent of mass 198.
198	Base peak, 100 percent relative abundance.
199	5-9 percent of mass 198.
275	10-30 percent of mass 198.
365	Greater than 1 percent of mass 198.
441	Present but less than mass 443.
442	Greater than 40 percent of mass 198.
443	17-23 percent of mass 442.

Tune acceptance must be verified at the beginning of every analytical shift, and prior to the analysis of any standards. If the DFTPP tune does not meet the criteria above, the PFTBA must be re-evaluated, and adjustments made by an experienced

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mass spectrometrist, to obtain an acceptable DFTPP tune, before continuing with any analysis.

13.3 GC Instrumental Conditions

13.3.1 Inject an aliquot of 1uL into the capillary column of the gas chromatograph at the following conditions. Larger injection volumes (to 50uL using the Large Volume Injector, LVI) will be dictated by project specific DQOs.

GC Parameter	Setting
Injector Temp:	280 °C
Transfer Line Temp:	300 °C
Initial Oven Temp:	40 °C
Initial Hold Time:	1 minute
Ramp Rate:	6 °C / minute
Final Temperature:	315 °C
Final Hold Time:	30 minutes
Total runtime:	76 minutes
Mode:	Splitless / Constant Flow 1.0ml/min
Purge:	20 mL / minute – on at 0.80 minutes
MS Temperature	300 °C

13.4 Mass Spectrometer Conditions

13.4.1 The effluent from the GC capillary column is fed directly into the ion source of the mass spectrometer. The MS is operated in the SIM mode using appropriate retention time windows to include the quantification and confirmation ions for each PAH and Biomarker compounds as shown in Table II. For each retention time window the ions 191, 217, and 218 are included for sterane and triterpane quantification, if requested by the client.

13.5 ProSep Injection Port Parameters for Large Volume Injections (LVI)

ProSep Parameter*	Setting*			
Injector Temp:	60 - 300 °C			
Initial Hold Time:	30 sec 3 minutes			
Flow Rate:	0.5 - 5.0 mL / minute			
Purge:	0.5- 5.0 mL / minute, ON at desired time			
Injection Volume:	1uL - 50uL			

^{* =} The settings listed may vary from project to project, based on client specific DQOs. *Injection temperature, hold time, flow rate, purge time and injection volume can effect chromatographic resolution and detection limits.* All parameters listed above can be set within the above setting ranges. Only a trained and experienced mass spectrometrist has the authority to change any setting. All standards and samples must be acquired using the

same set of parameters. If any parameters are changed, a new initial calibration must be analyzed and accepted before any samples can be analyzed.

13.6 Data Acquisition Parameters

13.6.1 SIM Windows must be set up that bracket the expected retention times for each target analyte. These windows include the quantitation (primary) and confirmation ions for each parent PAH and Alkyl homolog group. To establish the expected retention time window ranges, the mid-level calibration standard must be analyzed in full scan mode. The resulting full scan analysis will dictate the windows in which the selected ions will be monitored. The table below lists example and suggested windows and the ions that can be monitored within each window. *All possible ions and windows are not noted here*. Project or client specifications may dictate changes in ion selection and the number of windows. Depending upon the length of the analytical GC column, the time each window is selectively monitored may vary. The retention time windows must be shifted accordingly, when instrument maintenance is performed, (*i.e.*, the column is clipped).

Window	Selected Ions Monitored
Number	
# 1	64,83,85,113,120,123,128,134,136,138,142,148,152,154,156,162,166,170,176,180,190,194,207
# 2	64,83,85,113,123,139,141,153,154,155,156,162,164,168,169,170,176,179,183,184,190,193,207
# 3	64,83,85,113,123,152,155,165,166,169,170,174,176,178,179,180,183,184,188,190,194,195,198
# 4	64,83,85,113,139,167,177,191,192,194,195,198,206,207,208,212,217,218,226,231,241,253,256
# 5	64,83,85,101,177,191,197,202,206,207,211,212,215,216,217,218,219,220,226,231,234,240,253
# 6	64,83,85,113,114,177,189,191,205,215,216,217,218,219,220,229,230,231,234,240,244,253,258
# 7	83,85,177,191,215,217,218,226,228,229,230,231,234,240,241,242,244,248,253,256,258,262,270
# 8	83,85,113,177,191,217,218,231,241,242,252,253,255,256,258,260,262,264,270,276,284,290,370
# 9	64,83,85,113,114,163,177,191,217,218,231,252,253,255,260,262,264,269,270,276,284,290,370
#10	83,85,113,138,139,177,191,217,218,231,253,276,277,278,279,292,293,300,301,302,303,312,313

13.6.2 The "dwell" time for each window should be set to 18, and the resolution should be set to "high".

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13.7 Initial Calibration

- 13.7.1 Before analysis of sample extracts, establish a multi-point response factor calibration curve showing the linear range of the analysis for all target analytes in Table IA and IB. Use standard concentrations of 10, 25, 100, 500, 5000 and 10,000 ng/mL to construct the curve. See Section 10.13 for the preparation of the standard solutions for the initial calibration curve.
- 13.7.2 Run a sequence with the initial calibration standards and the retention time standard.
 - Create a processing method from a previous method on that instrument. Set retention time windows using a mid level standard and the retention time standard.
 - Quantify and QEDIT the initial calibration standards. Update the response factors for each level of the method with these standards. Use each parent compound response for any associated homolog group. Alkylated phenanthrenes and anthracenes, and alkylated fluoranthenes and pyrenes are quantified together as total alkylated phenanthrene/anthracenes (using the phenanthrene parent response factor) and total alkylated fluoranthenes/pyrenes (using the pyrene parent response factor).
 - Acceptance Criteria: 25% RSD for 90% of all target compounds, with the exception for 10% to be between 25%RSD and 35%RSD. All calibration standards must be analyzed within 24 hours.
- 13.7.4 Initial Calibration Check (ICC)
 - The analysis of an ICC standard must follow the initial calibration curve.
 - After final processing, calculate the percent recovery of each PAH by using the following calculation:

% Recovery = Found Amount / True Value x 100

- Acceptance Criteria: All recoveries must be +/- 20% of the true values.
- 13.7.5 If the initial calibration fails, perform instrument maintenance and repeat.
- 13.7.6 Alaska North Slope Crude Reference Oil (ANS)
 - The ANS crude oil reference standard is analyzed following each initial calibration curve. Analysis of this reference oil is to establish the integration patterns of the Alkyl PAH homolog groups, and to establish the current instrument quantitation and confirmation ion ratios. Analysis of this standard

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following the initial calibration ensures the retention time windows in the SIM mode of acquisition have been set up properly.

- The analysis of the ANS standard is for reference. If instrument maintenance is performed, such as removing a significant section of the analytical column consisting of one "loop" or more, the ANS must be analyzed to update and/or confirm the SIM acquisition windows.
- The ANS reference standard is processed against the completed initial calibration curve method. See Section 15.2 for information regarding manual integration of the Alkyl PAH homolog clusters. This standard will be used for reference when processing field samples for this method, until such a time that a new ANS standard needs to be analyzed. Other project/client specific source oils may be used. These specific oils will likely display patterns that differ from ANS, but will aid analysts in pattern identification of the related field samples.
- 13.7.8 ICALs are documented on the *Initial Calibration Checklist*. An example of the checklist can be found in Section 23.0. The initial calibration must be secondarily reviewed before analyzing samples.

14.0 Procedure

- 14.1 Daily PFTBA Tuning is not required. See Section 13.1 for details.
- 14.2 Evaluate the DFTPP tune as described in Section 13.2, if required.
- 14.3 Continuing Calibration Verification

A continuing calibration verification (CCV) standard, at the concentration of a mid-level initial calibration standard, must be analyzed at the beginning and end of every analytical sequence, and every 24 hours within the sequence, to confirm instrument stability, via response factor, for each calibrated PAH.

- 14.3.1 Quantitate and QEDIT the continuing calibration standard. **Note:** The Alkyl homolog groups may be deleted from the report. Only the parent PAH compounds are monitored for %D and the following acceptance criteria.
- 14.3.2 <u>Acceptance Criteria</u>: Compare the CCV resulting response against the average response for the initial calibration for each calibrated PAH. The %D for each calibrated PAH must be below 25%, with no more than 10% of all compounds greater than 25% but less than 35%. If multiple CCVs are analyzed within an analytical sequence, each CCV must be analyzed within 24 hours of the previous CCV and each CCV, including the ending CCV must meet the acceptance criteria.

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14.3.3 All CCVs are documented on the *Continuing Calibration Checklist*. An example of the checklist can be found in Section 23.0.

- 14.3.4 If the CCV does not meet 25%D and 10% of the analytes are <35%, for each calibrated PAH, the following *corrective actions* are recommended:
 - Perform instrument maintenance and repeat the continuing calibration, and reanalyze all affected samples, OR,
 - Qualify all results reported for the failing CCV with an appropriate qualifier, including all alkylated compounds quantified using the suspect response, and any non-detects. If the failure of the suspect response appears related to a loss in MS sensitivity, instrument maintenance and repeat analysis of the continuing calibration, and all affected samples, must be performed.

The choice of corrective action must be made in consultation with the Section Supervisor, QA Manager, Project Manager and/or the client. The reasoning for choosing the second option must be documented in the project narrative to the client

14.4 Daily Analytical Sequence

- 14.4.1 Samples are prioritized for analysis by the Organic Section Supervisor or GC/MS Group Leader based on client due date and sample analytical hold time. Samples are retrieved from the sample storage refrigerator.
- 14.4.2 The sequence is prepared and run using the Enviroquant software. Printouts of all sequences are kept in a three-ring notebook next to each instrument. The sequence printouts are used to document run sequences; notations are manually added of any reruns or dilutions that will need to be performed.
- 14.4.3 If the on-column concentration of any PAH compound exceeds the calibration range of 10,000 ng/mL, the sample must be diluted and re-analyzed.

15.0 Data Evaluation, Data Reporting and Calculations

15.1 Identification of the priority pollutant PAH compounds is based on gas chromatographic relative retention times (RRTs) from the analysis of a mid-level initial calibration standard. For these compounds, manual quantitations may be performed, if necessary, by integrating the area of the quantitation ion or peak. For *alkylated* PAHs, the homolog groupings (*i.e.*, C₃- Naphthalenes) appear in the extracted ion current profiles (EICPs) as a cluster of isomers. Integrate peaks within the cluster by straight-line integration to the baseline, taking into account background noise in the EICPs. Reference the Alaska North Slope Crude Oil pattern book, for a cluster by cluster example of each integration for each alkylated PAH homolog group. Table II, in Section 23.0, lists the representative ion(s) used for quantitation and confirmation of each parent PAH and alkylated PAH homolog group.

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<u>Note:</u> Manual integration is not to be used solely to meet QC criteria, nor is it to be used as a substitute for corrective action on the chromatographic system.

- 15.2 From EICP of the quantification (primary) mass ions and the confirmatory mass ions, identify all target analytes according to the following criteria:
 - The characteristic masses of each analyte of interest should maximize in the same, or within one scan of each other.
 - PAH from the preceding CCV. <u>Note:</u> When evaluating alkyl homolog groups, the retention time of the most intense peak within the group may not have the exact retention time of the most intense peak in the ANS reference standard. Analyst judgement and referral to each homolog groups' retention time window is essential for identification. Apply analyst judgment regarding corrective action when this criterion is not met.
 - The relative peak heights of the primary ion compared to the confirmation or secondary ion masses for parent compounds should fall within ± 50 percent of the relative intensities of these masses in a the reference mass spectrum (*i.e.*, the midlevel of the initial calibration curve and/or the Alaska North Slope Crude Oil).

<u>Note</u>: The relative intensities of the primary and secondary ions may vary widely within a given group of alkyl homologs (*i.e.*, C_3 - Naphthalenes). Thus, the pattern of each alkyl homolog cluster, and the retention time window for the cluster, will be the primary identification criteria for alkyl homologs. In some instances, a parent compound that does not meet secondary ion confirmation criteria may still be determined to be present in a sample after close inspection of the data by the experienced mass spectrometrist. Supportive data includes the presence of the secondary ion, but ratio value greater than \pm 50 percent of the primary ion, may be caused by an interference of the secondary ion.

To calculate the *Relative Standard Deviation* (RSD) of all target analytes and surrogate compounds for the initial calibration use the formula below. The RSD of each target compound and surrogate must be below 25%. Additionally, use the initial six-point calibration to determine *Relative Response Factors* (RRF_{IS}) at each concentration level. Average the RRF_{IS}, to generate mean RRF_{IS}, for quantification of all target analytes and surrogate compounds. The RRF_{IS} are based on the internal standard compounds, and are calculated using the formula below. (The relative response factors for the continuing calibration verifications (RRF_{CS}) are calculated using the same formula). See Section 23.0, Table IA and Table IB, for the listing of target compounds and their associated internal standards for quantification.

 $RSD = SD / mean RRF_I \times 100$

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where:

SD = Standard deviation between the five points, for that target analyte.

$$RRF_{I} = (A_{c} \times C_{IS}) / (A_{IS} \times C_{c})$$

where:

 $A_c = Area of the characteristic ion for the standard compound to be measured.$

 A_{IS} = Area of the characteristic ion for the representative internal standard compound.

 C_{IS} = Concentration of the representative internal standard compound (ng/mL).

 C_c = Concentration of the standard compound to be measured (ng/mL).

Note: Assign the response factor of the parent compound to the alkyl homolog cluster.

Based on the mean RRF_Is, calculate the *Sample Extract Amount* for each target analyte and surrogate in the extracts using the following formula:

$$Q_e = (A_a \times Q_{IS}) / (A_{IS} \times RRF_I)$$

where:

 $Q_e = Sample extract amount (ng) of target analyte, from quantitation report.$

 $A_a = A$ Area of the characteristic ion for the target analyte.

 A_{IS} = Area of the characteristic ion for the representative internal standard compound.

 Q_{IS} = Amount of internal standard compound added to each extract (ng).

15.7 Calculate the *Sample Concentration* (C) for each compound by the following formula:

$$C = (Q_e/V_s) \times DF$$

where:

C = Concentration in sample (ng/L water, ug/Kg sediment/tissue, or mg/Kg product).

 $V_s = Original volume or weight of sample extracted.$

DF = Dilution factor or fraction of the original extract to which internal standard added.

15.8 If the response of any individual target compound in a sample exceeds the linear response range, as defined by the initial calibration standards in Section 10.13, dilute the extract so that the concentrations of all individual target compounds fall within the range of the calibration curve. If that compound is also part of an alkyl homolog group, the group is considered to exceed the calibration range and thus, would also require dilution. Reported concentrations that are above the highest standard concentration in the initial calibration

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are qualified with an "E". If the response of any target compound in a sample exceeds the MDL but is below the reporting limit (RL), qualify the reported concentration with a "J". If any target compound is found in the method blank and in the associated sample(s), qualify the reported concentration with a "B".

15.9 Compare response factors for each compound in the *Continuing Calibration Verification* (CCV), to those of the initial calibration curve by determining the percent difference.

Percent Difference (%D) = $([RRF_I - RRF_C] / RRF_I) \times 100$

where:

RRF_I = Mean response factor from initial calibration.

 RRF_C = Response factor from CCV.

- 15.10 All results must be reported to two significant figures. All solids including soils, sediments, and sludges must be reported on a dry-weight basis. Tissue results may be reported in wet-weight depending upon client request. Petroleum results are reported "as received" or on a wet-weight basis.
- 15.11 The analyst does data entry, or upload of the data, into the LIMS system. The LIMS is linked to the instrument, so the analyst must choose the sample(s) to be reported from that instrument's analytical sequence. All associated preparation and instrumental QC samples and dilutions are also chosen. Once the data/samples have been selected and "associated" with the proper QC samples, the batched data set is sent to print.
- 15.12 The laboratory generates two types of data packages from the LIMS: "Standard" for routine projects, and "CLP-like" for fully data validated projects. A standard package consists of sample results and the associated QC sample results. A CLP-like package includes all sample results, all preparation and instrumental QC results and the associated supporting raw data. The checklists used for primary and secondary review of the analytical results can be found in Section 23.0. A secondary review is performed on all data.
- 15.13 Procedures for data and record management must adhere to the Quality Systems Manual, other subordinate documents covering record keeping, and the *Document Control* SOP, G-016. All records shall be stored in such a manner as to be safe and accessible for at least 10 years.
- 15.14 Notebooks: Laboratory notebooks are designed to accommodate the specific analysis. Instrument printouts are used to document run sequences, and each sequence printout is filed in a three-ring notebook. Each sequence notebook page is numbered. If a sample requires re-analysis or re-extraction for any reason, a notation is made next to the sample entry on the sequence log. The sequence run log is permanently bound, assigned an internal ID number, and filed accordingly. Such files shall be archived so as to remain

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available for at least 10 years. All laboratory notebooks must follow the specifications in the *Laboratory Notebook Usage* SOP, G-009, and all record keeping and document control practices.

15.15 <u>Electronic records:</u> All data files from computers, attached to instruments, shall be backed up daily onto the proper directory on the server. The backups shall be stored so as to be accessible for 10 years. Movement of the data files to the server is the responsibility of the primary analyst. Server backup and storage is the responsibility of the IT department.

16.0 Method Performance

16.1 Refer to Alpha Analytical SOP#08-12 for a description of Initial Demonstration of Proficiency (IDP) which is performed by every new analyst during training.

17.0 Pollution Prevention

See Section 21.0, Waste Management for a discussion on Pollution Prevention.

18.0 Data Assessment and Acceptance Criteria

All Alkylated PAH-SIM results are reportable without qualification if analytical holding times are met, preservation requirements (including cooler temperatures) are met, and all QC criteria defined in the table below are met. If any of the below QC parameters are not met, all associated samples must be evaluated for re-analysis. See Sections 12.0, 13.0 and 14.0 for additional QC discussion including corrective actions for any QC outliers.

QC Parameter	Acceptance Criteria
Initial Calibration Curve	\leq 25%D for all target analytes with exception for 10% of target analytes can be >25%, but \leq 35%
Independent Calibration Verification	+/- 20% recovery of the true values
Continuing Calibration Verification	Analyzed every 10 samples or 24 hours, \leq 25%D for all target analytes with exception for 10% of target analytes can be >25%, but \leq 35%
Method Blank	No analyte at or above the reporting limit, "B" qualify analyte if detected and/or greater than 1/10 the amount found in samples
Laboratory Control Sample	50-130%R for all target analytes
Matrix Spike / Matrix Spike Duplicate	50-150%R for all target analytes, 30% RPD between the duplicates.
Sample / Sample Duplicate	30% RPD between the duplicates.
Surrogates	50% - 130% recovery
Internal Standards	50% - 200% of the daily CCV area for the Internal Standards
SRM	+/- 35% D or 65% - 135% recovery

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19.0 Corrective Actions for Non-Compliant Data

Section 12.0, Quality Control, defines the corrective actions that must be taken in instances where QC outliers exist. If the corrective actions have been followed and the data is still unacceptable, reference Section 20.0 for guidance on reporting non-compliant data.

20.0 Contingencies for Handling Unacceptable Data

Section 18.0 outlines sample batch QC acceptance criteria. If non-compliant Alkylated PAH-SIM results are to be reported, the Section Supervisor and/or the Laboratory Director, and the QA Manager must approve the reporting of these results. The laboratory Project Manager shall be notified, and may chose to relay the non-compliance to the client, for approval, or other corrective action, such as re-sampling and re-analysis. The analyst or Section Supervisor performing the secondary review initiates the project narrative, and the narrative must clearly document the non-compliance and provide a reason for acceptance of these results.

21.0 Waste Management

The Alpha Analytical *Hazardous Waste and Sample Disposal* SOP (G-006), must be referenced for disposal of used standards, solvents, acids, reagents or other chemicals.

Once satisfactory Alkylated PAH-SIM results have been generated, the extracts are held for 30 days, or longer if specified by a client contract, then discarded into a 55-gallon drum labeled "Vial Waste".

22.0 References

References in addition to the analytical test methods listed in Section 1.0. Identification of Test Methods, used to create this SOP, include the following:

- 22.1 EPA/600/R-96/027, Guidance for the Preparation of Standard Operating Procedures (SOPs) for Quality Related Documents, 1996.
- 22.2 EPA, 40CFR, Part 136, Appendix B, 7/1997.
- 22.3 National Environmental Laboratory Accreditation Conference (NELAC) Standard, Chapter 5, 6/2003.
- 22.4 The Alpha Analytical *Quality Systems Manual*, Rev. 5.1, 5/2008.
- 22.5 Smith, Roy-Keith, *Handbook of Environmental Analysis*, 4th Edition, 1999.
- 22.6 Department of Defense *Quality Systems Manual for Environmental Laboratories*, Version 3, 5/2005.

23.0 Tables and Checklists

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Table IA: PAH, Alkyl PAH, and Heterocyclic Target Compounds Internal Standard Reference

Compound	IS Reference	get Compounds Internal Standa Compound	IS Reference
Decalin	15 Keierence	Naphthobenzothiophene	15 Kelerence
C ₁ -Decalins	1		1
	1	C ₁ -Naphthobenzothiophene	1
C ₂ -Decalins	1	C ₂ -Naphthobenzothiophene	1 1
C ₃ -Decalins	l	C ₃ -Naphthobenzothiophene	1
C ₄ -Decalins	l	Benzo[a]anthracene	2
Naphthalene	l	Chrysene	2
C ₁ -Naphthalenes	1	C ₁ -Chrysenes	2
C ₂ -Naphthalenes	1	C ₂ -Chrysenes	2
C ₃ -Naphthalenes	1	C ₃ -Chrysenes	2
C ₄ -Naphthalenes	1	C ₄ -Chrysenes	2
2-Methlynaphthalene	1	Benzo[b]fluoranthene	2
1-Methlynaphthalene	1	Benzo[k]fluoranthene	2
Acenaphthylene	1	Benzo[e]pyrene	2
Acenaphthene	1	Benzo[a]pyrene	2
Biphenyl	1	Perylene	2
Benzothiophene	1	Indeno[1,2,3-c,d]pyrene	2
2,6-Dimethylnaphthalene	1	Dibenz[a,h]anthracene	2
Dibenzofuran	1	Benzo[g,h,i]perylene	2
2,3,5-Trimethylnaphthalene	1		
Fluorene	1		
C ₁ -Fluorenes	1		
C ₂ -Fluorenes	1		
C ₃ -Fluorenes	1		
Dibenzothiophene	1		
C ₁ -Dibenzothiophenes	1	Surrogate Compounds	
C ₂ -Dibenzothiophenes	1	2-Methylnaphthalene-d ₁₀	1
C ₃ -Dibenzothiophenes	1	Pyrene-d ₁₀	1
C ₄ -Dibenzothiophenes	1	Benzo(b)fluoranthene-d ₁₂	2
Phenanthrene	1	5B(H) - cholane	2
Anthracene	1		_
C ₁ -Phenanthrenes/Anthracenes	1		
C ₂ -Phenanthrenes/Anthracenes	1	Internal Standards	
C ₃ -Phenanthrenes/Anthracenes	1	Acenapthene-d ₁₀	1
C ₄ -Phenanthrenes/Anthracenes	1	Chrysene-d ₁₂	2
1-Methylphenanthrene	1	Cm ysenc-u ₁₂	_
Carbazole	1		
Fluoranthene	1		
Pyrene	1		
C ₁ -Fluoranthrenes/Pyrenes	1		
C ₂ -Fluoranthrenes/Pyrenes	1		
C ₂ -Fluoranthrenes/Pyrenes	1		
C ₄ -Fluoranthrenes/Pyrenes	1 1		
C ₄ -riuoranunenes/Pyrenes	1		

<u>Note:</u> Alkylated phenanthrenes and anthracenes, and alkylated fluoranthenes and pyrenes are quantified together as total alkylated phenanthrene/anthracenes (using the phenanthrene parent response factor) and total alkylated fluoranthenes/pyrenes (using the pyrene parent response factor).

<u>Table IB:</u> Sterane and Triterpane Target Compounds Internal Standard Reference

Compound	IS Reference
C23 Tricyclic Terpane	2
C24 Tricyclic Terpane	2
C25 Tricyclic Terpane	2
C24 Tetracyclic Terpane	2
C26 Tricyclic Terpane-22S	2
C26 Tricyclic Terpane-22R	2
C28 Tricyclic Terpane-22S	2
C28 Tricyclic Terpane-22R	2
C29 Tricyclic Terpane-22S	2
C29 Tricyclic Terpane-22R	2
18a-22,29,30-Trisnorneohopane-TS	2
C30 Tricyclic Terpane-22S	2
C30 Tricyclic Terpane-22R	2
17a(H)-22,29,30-Trisnorhopane-TM	2
17a/b,21b/a 28,30-Bisnorhopane	2
17a(H),21B(H)-25-Norhopane	2
30-Norhopane	2
18a(H)-30-Norneohopane-C29Ts	2
17a(H)-Diahopane	2
30-Normoretane	2
18a(H)&18b(H)-Oleananes	2
17a(H),21B(H)-hopane-C30H52	2
Moretane	2
30-Homohopane-22S	2
30-Homohopane-22R	2
30,31-Bishomohopane-22S	2
30,31-Bishomohopane-22R	2
30,31-Trishomohopane-22S	2
30,31-Trishomohopane-22R	2
Tetrakishomohopane-22S	2
Tetrakishomohopane-22R	2
Pentakishomohopane-22S	2
Pentakishomohopane-22R	2
13b(H),17a(H)-20S-Diacholestane	2
13b(H),17a(H)-20R-Diacholestane	2
13b,17a-20S-Methyldiacholestane	2
14a(H),17a(H)-20S-Cholestane	2
14a(H),17a(H)-20R-Cholestane	2

13b,17a-20R-Ethyldiacholestane	2
13a,17b-20S-Ethyldiacholestane	2
14a,17a-20S-Methylcholestane	2
14a,17a-20R-Methylcholestane	2
14a(H),17a(H)-20S-Ethylcholestane	2
14a(H),17a(H)-20R-Ethylcholestane	2
14b(H),17b(H)-20R-Cholestane	2
14b(H),17b(H)-20S-Cholestane	2
14b,17b-20R-Methylcholestane	2
14b,17b-20S-Methylcholestane	2
14b(H),17b(H)-20R-Ethylcholestane	2
14b(H),17b(H)-20S-Ethylcholestane	2
C26,20R- +C27,20S- triaromatic steroid	2
C28,20S-triaromatic steroid	2
C27,20R-triaromatic steroid	2
C28,20R-triaromatic steroid	2

Table II. PAH Alkyl PAH Sterane and Triternane Quantification Primary and Confirmation Ions

Table II: PAH, Alkyl PAH, St	erane and Triterpane Qu	antification Primary and Confirm		
Commonad	Quantification &	Common d	Quantification &	
Compound Decalin	Confirmation Ions	Compound	Confirmation Ions	
* * * * *	138, 96	Pyrene	202, 101	
C ₁ -Decalins	152	C ₁ -Fluoranthrenes/Pyrenes	216, 215	
C ₂ -Decalins	166	C ₂ -Fluoranthrenes/Pyrenes	230, 215	
C ₃ -Decalins	180	C ₃ -Fluoranthrenes/Pyrenes	244, 229	
C ₄ -Decalins	194	C ₄ -Fluoranthrenes/Pyrenes	258	
Naphthalene	128, 127	Naphthobenzothiophene	234, 189	
C ₁ -Naphthalenes	142, 141	C ₁ -Naphthobenzothiophene	248	
C ₂ -Naphthalenes	156, 141	C ₂ -Naphthobenzothiophene	262	
C ₃ -Naphthalenes	170, 155	C ₃ -Naphthobenzothiophene	276	
C ₄ -Naphthalenes	184, 169, 183	Benz[a]anthracene	228, 226	
2-Methylnaphthalene	142, 141	Chrysene	228, 226	
1- Methylnaphthalene	142, 141	C ₁ -Chrysenes	242, 241	
Acenaphthylene	152, 153	C ₂ -Chrysenes	256, 241	
Acenaphthene	154, 153	C ₃ -Chrysenes	270, 255	
Biphenyl	154, 153	C ₄ -Chrysenes	284, 269	
Benzothiophene	134	Benzo[b]fluoranthene	252, 253	
2,6-Dimethylnaphthalene	156, 155	Benzo[k]fluoranthene	252, 253	
Dibenzofuran	168, 139, 169	Benzo[e]pyrene	252, 253	
2,3,5-Trimethylnaphthalene	170, 155	Benzo[a]pyrene	252, 253	
Fluorene	166, 165	Perylene	252, 253	
C ₁ -Fluorenes	180, 165	Indeno[1,2,3-c,d]pyrene	276, 138, 277	
C ₂ -Fluorenes	194, 179,195	Dibenz[a,h]anthracene	278, 139, 279	
C ₃ -Fluorenes	208, 197	Benzo[g,h,i]perylene	276, 277	
Dibenzothiophene	184, 152			
C ₁ -Dibenzothiophenes	198, 197	Biomarker Compounds		
C ₂ -Dibenzothiophenes	212, 197	Triterpanes	191	
C ₃ -Dibenzothiophenes	226, 211	Steranes	217, 218	
C ₃ -Dibenzothiophenes	240, 225	Triaromatic steroids	231	
Phenanthrene	178, 176	Surrogate Compounds		
Anthracene	178, 176	2-Methylnaphthalene-d ₁₀	152, 150	
C ₁ -Phenanthrenes/Anthracenes	192, 191	Pyrene-d ₁₀	212, 211	
C ₂ -Phenanthrenes/Anthracenes	206, 191, 207	Benzo(b)fluoranthene-d ₁₂	264, 260	
C ₃ -Phenanthrenes/Anthracenes	220, 205	5B(H) - cholane	217, 218	
C ₄ -Phenanthrenes/Anthracenes	234, 219			
1-Methylphenanthrene	192	<u>Internal Standards</u>		
Carbazole	167, 139	Acenapthene-d ₁₀	164, 162	
Fluoranthene	202, 101	Chrysene-d ₁₂	240, 241	

<u>Note:</u> Alkylated phenanthrenes and anthracenes, and alkylated fluoranthenes and pyrenes are quantified together as total alkylated phenanthrene/anthracenes (using the phenanthrene parent response factor) and total alkylated fluoranthenes/pyrenes (using the pyrene parent response factor).

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Table III: <u>Initial Calibration Checklist</u>
Alpha Analytical Laboratories Ma Mansfield, Mass

Forensic Group
PAH BY GC/MS -SIM Initial Calibration Verification Checklist

Sequence ID		S1042901 Run Start/End		Date	04/29/0	6			
ICAL Met	thod Used	PAH10429		_Instrun	nent ID	PAH#		1	
	ICV ID	File #	Date	Time	PASS/FAIL		Comments		2nd
	_	PXXXXXX	MM/DD/YY	23:59					
ICV Check 1	I1042901	P19079	04/29/2006	1546	NA				
ICV Check 2	I1042902	P19080	04/29/2006	1713	NA				
ICV Check 3	I1042903	P19081	04/29/2006	1841	NA				
ICV Check 4	I1042904	P19082	04/29/2006	2007	NA				
ICV Check 5	I1042905	P19083	04/29/2006	2135	NA				
ICV Check 6	I1042906	P19084	04/29/2006	2302	NA				
ICV Check 7					NA				
ICC Check 1*	Q1032901	P19085	04/30/2006	0030	PASS				
ANS # 1	AWS1042901	P19086	04/30/2006	0158	PASS				
SA#1									
SSF #1									
LAN # 1									
SFFC#1									
Review	(to be completed a	after ICAL has finish	ed)				Comments		
1. Is there a copy	y of the analytical s	sequence attached?			YES/NO/NA				
2 Did the DETR	Δ meet the tune cri	teria before ICAL?			YES/NO/NA				
(69 base >100	0000, 219 30-60%,				YES/NO/NA				
4. Were at least	5 Levels of each co	ompound analyzed?			YES/NO/NA				
5. Was the prima	ary ion used for all	compounds?			YES/NO/NA				
6. Is the % RSD	<25%				YES/NO/NA				
•	RF entered for all heane/cholane for bid	•			YES/NO/NA				
8. Are benzo(b)/	(k)fluoranthene res	olved to 80% of bas	eline?		YES/NO/NA				
Comments									_
Drimon, Arabat					Dete				È
Primary Analyst									
Reprint updated Sticker sheet Second Level Review Date									
Second level review must be done before ICAL can be used. * Second source All Raw data must be attached.									

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Table IV: Continuing Calibration Checklist

	CCV ID	File #	Date	Time	Pass/Fail	Comments	2nd
CCV ID C	XMMDD0X	PXXXXXX	MM/DD/YY	23:59			
CCV Check #	C3050201	P35673	05/02/06	1222	PASS		
CCV Check #	C3050202						
CCV Check #	C3050203						
CCV Check #	C3050204						
CCV Check #	C3050205						
CCV Check #	C3050206						
CCV Check #							
CCV Check #							
CCV Check #							
CCV Check #							
CCV Check #							
CCV Check #							
CCV Check #							
CCV Check #							
CCV Check #							
Review (to be completed after sequence has finished) 1. Is there a copy of the analytical sequence attached? 2. Did the PFTBA meet the tune criteria before or during ICAL? 3. Were all CCV injected within 10 samples or 24 hours of each other? 4. Was the correct ICAL used to quantify each CCV? 5. Are the Internal Stds areas between 50-200% of the ICAL? 6. Is the % D <25% for 90% of analytes, <35% for all? 7. Are benzo(b)/(k)fluoranthene resolved to 80% of baseline? Comments YES/NO/NA YES/NO/NA YES/NO/NA YES/NO/NA YES/NO/NA YES/NO/NA							
Comments							
Primary Analys	t			_	Date		
Second Level F	Review			_	Date		

Fable V: Data Review Checklist	<u> </u>			
GC/MS Project Checklist			1° Analyst:	2º Review:
	Report Date:		1° Analyst:	2º Review:
ETR:	Client:		Project:	
A. Analysis Review	1°	2°	QC Pass/Fail	Comments
. PFTBA and ICAL meet criteria				
2. Instrument Check (ICV) - within limits (80-120%) analyzed per ICAL)				
3. Control Oil (NSC) - within limits (65-135%) (analyzed per ICAL)				
4. CCV's meet criteria				
5. Applicable samples Re-run for failing CCV?				
6. Method Blank meets criteria				
LCS/LCSD - within limits (50-130% rec, ≤30%RPD)				
'a. MS/MSD - within limits (50-130% rec, ≤30%RPD)				
S. Sample Duplicates ≤30% RPD for analytes >5X the RL	?			
Internal Standards - within limits (50-200% of the area of the IS in the associated CCV?				
0. Surrogate Recoveries - within limits (50-130%)				
11. Samples - Reviewed for appropriate integrations?				
	<u> </u>	<u> </u>	1	
B. Report Review	10	20	Changed?	Notes
12. Correct Initial Volume, Weight? 13. Correct Final Volume?	<u> </u>			
4. Correct Dilution used?			+	
5. PAH and/or Biomarker quantified vs. correct RF?				
6. Forms I, III, IV, VIII generated and included?	1		+	
7. % Solids included?				
8. Calculations correct for RL and reported	1			
concentrations?				
9. Narrate - QC issues from above				
C. Final Report	2°			Notes
•	<u> </u>		1	10000
20. EDD copies to PM?				
21. EDD generated, checked, and emailed to client?				
22. Hard Copy complete? Sent for pagination/scanning.		l		

PM responsible for final Hard Copy data and delivery.

Protocol Modification Form: Fish/Decapod QAPP No. 8

Project Name and Number: Passaic RI 09.58.02.31

Material to be Sampled: <u>Tissue</u>

Measurement Parameter: Selenium

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Columbia Analytical Services (CAS, Kelso) has revised the SOP for selenium analysis. The SOP referenced in Worksheet No. 23 of the Fish/Decapod QAPP as Attachment T12: "MET-7742, Standard Operating Procedure for Selenium by Borohydride Reduction Atomic Absorption, Revision 2, 1/6/2006".

Reason for Change in Field Procedure or Analysis Variation:

CAS, Kelso updated their selenium SOP to include text that describes their matrix spike additions procedure that was not documented previously in the SOP.

Variation from Field or Analytical Procedure:

Special Equipment, Materials or Personnel Required:

The new CAS, Kelso selenium SOP "MET-7742, Standard Operating Procedure for Selenium by Borohydride Reduction Atomic Absorption, Revision 3, 2/19/2010", Attachment T12, is attached to this protocol modification form. Section 19 of the SOP details revisions that were made since the previous version (Revision 2). The most significant change was to include text to describe their matrix spike additions procedure.

None.			
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Initiator's Name:		Date:	4/15/10
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Project Manager:	hisa dela	Date:	4/27/10
QA Manager:	Tayl Kleshles	Date:	4/24/10
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USEPA Authority:		Date:	

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STANDARD OPERATING PROCEDURE

SELENIUM BY BOROHYDRIDE REDUCTION ATOMIC ABSORPTION

MET-7742

Revision: 3
February 19, 2010

Approved By:	Supervisor	1 79 10 Date
	Julii Gish QA Manager	1/29/16 Date
	Laboratory Manager	1/27/10 Date

COLUMBIA ANALYTICAL SERVICES, INC.

1317 South 13th Avenue Kelso, Washington 98626

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Annual review of this SOP has been performed		DOCUMENT CONTROL	
and the SOP s	still reflects current practice.		
Initials:	Date:	NUMBER:	
Initials:	Date:		
Initials:	Date:	Initials:	Date:

Revision 3

Date: 1/28/2010

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SELENIUM BY BOROHYDRIDE REDUCTION ATOMIC ABSORPTION

1. SCOPE AND APPLICATION

- 1.1. This Standard Operating Procedure (SOP) describes the procedure used for the analysis of Selenium by borohydride reduction atomic absorption using EPA Method 7742 or Standard Method 3114B. This procedure describes the analysis procedures used to determine the analyte concentration and reporting limits listed. The sample preparation procedures are described in sample preparation SOPs MET-3010A, MET-3050B, and MET-TDIG.
- 1.2. This procedure is used to determine Selenium in water, soil, and tissue matrices. The procedure may be applied to other miscellaneous sample matrices providing that the analyst demonstrates the ability of the procedure to give data of acceptable quality in that matrix. The Method Reporting Limits (MRLs) are presented in Table 1. Method Detection Limits (MDLs) that have been achieved are also given.
- 1.3. In cases where there is a project-specific quality assurance plan (QAPP), the project manager identifies and communicates the QAPP-specific requirements to the laboratory. In general, project specific QAPP's supersede method specified requirements. An example of this are projects falling under DoD ELAP. QC requirements defined in the SOP *Department of Defense Projects Laboratory Practices and Project Management (ADM-DOD)* may supersede the requirements defined in this SOP.

2. METHOD SUMMARY

- 2.1. Samples are prepared according to the nitric acid digestion procedure described in Method 3010 for aqueous and extract samples, the nitric/peroxide/hydrochloric acid digestion procedure described in Method 3050 for sediments, soils, and sludges, and the nitric/closed vessel digestion for tissues. Excess peroxide is removed by evaporating samples to near-dryness at the end of the digestion followed by dilution to volume and degassing the samples upon addition of urea. The selenium is converted to the +4 oxidation state during digestion in HCl. Selenium is then converted to its volatile hydride using hydrogen produced from the reaction of the acidified sample with sodium borohydride in a continuous-flow hydride generator.
- 2.2. The volatile hydrides are swept into, and decompose in, a heated quartz absorption cell located in the optical path of an atomic absorption spectrophotometer. The resulting absorption of the lamp radiation is proportional to the selenium concentration...

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3. **DEFINITIONS**

3.1. Analysis Sequence - Samples are analyzed in a set referred to as an analysis sequence. The sequence begins with instrument calibration (initial or continuing verification) followed by sample extracts interspersed with calibration standards (CCBs, CCVs, etc...) The sequence ends when the set of samples has been injected or when qualitative and/or quantitative QC criteria indicate an out-of-control situation.

- 3.2. Independent Calibration Verification (ICV) Initial calibration verification standards that are analyzed after initial calibration with newly prepared standards but prior to sample analysis, in order to verify the validity of the standards used in calibration. The ICV standards are prepared from a materials obtained from a source different from that used to prepare calibration standards.
- 3.3. Matrix Spike (MS) Analysis In the matrix spike analysis, predetermined quantities of target analytes are added to a sample matrix prior to sample preparation and analysis. The purpose of the matrix spike is to evaluate the effects of the sample matrix on the method used for the analysis.
- 3.4. Duplicate Sample (DUP) A laboratory duplicate. The duplicate sample is a separate field sample aliquot that is processed in an identical manner as the sample proper. The relative percent difference between the samples is calculated and used to assess analytical precision.
 - 3.5. Standard Curve A standard curve is a calibration curve that plots concentrations of a known analyte standard versus the instrument response to the analyte. A linear regression calibration model is used. The appropriate criteria for assessing the validity of the calibration curve must be followed prior to quantitation of target analytes in actual sample analyses.
 - 3.6. Method Blank (MB) The method blank is an artificial sample composed of analyte-free water or solid matrix and is designed to monitor the introduction of artifacts into the analytical process. The method blank is carried through the entire analytical procedure.
 - 3.7. Continuing Calibration Verification Standard (CCV) A mid-level standard analyzed at specified intervals. Used to verify that the initial calibration curve is still valid for quantitative purposes.
 - 3.8. Instrument Blank (CCB) The instrument blank (also called continuing calibration blank) is a volume of clean solvent analyzed on each column and instrument used for sample analysis. The purpose of the instrument blank is to determine the levels of contamination associated with the instrumental analysis itself, particularly with regard to the carry-over of analytes from standards or highly contaminated samples into subsequent sample analyses.
 - 3.9. Method of standard additions (MSA) The standard addition technique involves adding known amounts of standard to one or more aliquots of the processed sample solution. This technique attempts to compensate for a sample constituent that enhances or

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depresses the analyte signal, thus producing a different slope from that of the calibration standards. It will not correct for additive interferences which cause a baseline shift.

4. INTERFERENCES

- 4.1. Very high (>1000 mg/L) concentrations of cobalt, copper, iron, mercury, and, nickel can cause analytical interferences through precipitation as reduced metals and associated blockage of transfer lines and fittings.
- 4.2. Traces of peroxides left following the sample work-up can result in analytical interferences. Peroxides must be removed by evaporating each sample to near-dryness followed by reacting each sample with urea and allowing sufficient time for degassing before analysis.
- 4.3. Even after acid digestion, flame gases and organic compounds may remain in the sample. Flame gases and organic compounds can absorb at the analytical wavelengths and background correction should be used.

5. SAFETY

- 5.1. All appropriate safety precautions for handling solvents, reagents and samples must be taken when performing this procedure. This includes the use of personnel protective equipment, such as, safety glasses, lab coat and the correct gloves.
- 5.2. Chemicals, reagents and standards must be handled as described in the CAS safety policies, approved methods and in MSDSs where available. Refer to the CAS Environmental, Health and Safety Manual and the appropriate MSDS prior to beginning this method.
- 5.3. Hydrochloric and/or Nitric Acid are used in this method. These acids are extremely corrosive and care must be taken while handling them. A face shield should be used while pouring acids. And safety glasses should be worn while working with the solutions. Lab coat and gloves should always be worn while working with these solutions.

6. SAMPLE COLLECTION, CONTAINERS, PRESERVATION, AND STORAGE

- 6.1. Aqueous samples are typically collected in plastic containers. Aqueous samples are preserved with nitric acid (pH \leq 2), then refrigerated at 4 ± 2 °C from receipt until analysis.
- 6.2. Non-aqueous samples may be collected in plastic or glass jars. Non-aqueous samples are refrigerated at 4 ± 2 °C from receipt until analysis. Non-aqueous samples should be analyzed as soon as possible following sampling.
- 6.3. Tissue samples are typically collected in plastic or glass jars. Prepared samples are stored frozen at $< 10^{\circ}$ C until preparation. Tissue samples can be held up to one year.

7. REAGENTS AND STANDARDS

7.1. Reagents

- 7.1.1. Reagent grade chemicals shall be used in all tests. Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lowering the accuracy of the determination.
- 7.1.2. Concentrated Hydrochloric Acid (HCl)
- 7.1.3. 4% Sodium Borohydride (NaBH₄). 20g NaBH₄ plus 2g of sodium hydroxide dissolved in 500mL of reagent water.
- 7.1.4. Urea (H₂NCONH₂)
- 7.1.5. Reagent and grade

7.2. Standards

- 7.2.1. Stock standard solutions may be purchased from a number of vendors. All standards purchased from vendors must be traceable to NIST or A2LA certified reference materials. Purchased standards are typically prepared at a concentration of 1000 ppm, and are prepared in 500 mL plastic bottles. The vendor-assigned expiration date is used.
- 7.2.2. A 1000 ppb intermediate stock standard is prepared by pipetting 0.100 mL of 1000 ppm stock standard, plus 1.0 mL of concentrated HNO₃, into a 100 mL volumetric and diluting to volume with reagent water.
- 7.2.3. The ICV is prepared at 10 ppb as described above. The 1000 ppb intermediate stock used for the ICV is prepared from a source independent of the original 1000 ppm purchased standard.

8. APPARATUS AND EQUIPMENT

- 8.1. Perkin Elmer AAnylst 200 Atomic Absorption Spectrophotometer.
 - 8.1.1. FIAS -100 Vapor Generator
 - 8.1.2. Quartz Absorbance Cell
 - 8.1.3. Selenium Hollow Cathode Lamp

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- 8.2. Digestion Hot-Block capable of maintaining 50°C
- 8.3. 50 mL Centrifuge Tubes
- 8.4. Hot Plates capable of maintaining 50°C
- 8.5. 50 mL Volumetric Flasks

9. PREVENTIVE MAINTENANCE

- 9.1. All maintenance activities are recorded in a maintenance logbook kept for each instrument. Pertinent information (serial numbers, instrument I.D., etc.) must be in the logbook. Maintenance entries should include date, symptom of problem, corrective actions, description of maintenance, date, and name. The log should contain a reference to return to analytical control.
- 9.2. Typical preventive maintenance measures include, but are not limited to, the following items:
 - Cleaning the nebulizer and burner head
 - Cleaning the gas liquid separator
 - Inspection of the hollow cathode and deuterium lamp conditions

10. RESPONSIBILITIES

- 10.1. It is the responsibility of the analyst to perform the analysis according to this SOP and to complete all documentation required for data review. Analysis and interpretation of the results are performed by personnel in the laboratory who have demonstrated the ability to generate acceptable results utilizing this SOP. This demonstration is in accordance with the training program of the laboratory. Final review and sign-off of the data is performed by the department supervisor/manager or designee.
- 10.2. It is the responsibility of the department supervisor/manager to document analyst training. Documenting method proficiency, as described in Methods 7742 and 3114B, is also the responsibility of the department supervisor/manager.

11. PROCEDURE

11.1. Sample Preparation

11.1.1. Water samples are first prepared by EPA Method 3010A (CAS SOP; MET-3010A), soil samples by EPA Method 3050B (CAS SOP; MET-3050) with modifications noted below, and tissue samples by closed vessel digestion (CAS SOP; MET-TDIG).

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Note: The 3050B soil digestion is modified as follows: After the final peroxide addition (i.e. before the final reduction stage) add 5.0mL of concentrated hydrochloric acid and reduce the digestate volume to less than 5.0mL, but not to dryness. After cooling, dilute the digestate to 100mL with reagent water.

11.2. Digestate Preparation for hydride analysis

- 11.2.1. Waters 25 mL of the water digestate is aliquoted to a 50 mL centrifuge tube and 20 mL of concentrated HCl is added. The centrifuge cap is loosely placed on the tube and the sample is heated in a digestion hot-block at 50°C for 30 minutes. After cooling the sample is diluted to 50 mL as needed resulting in a two fold dilution of the original digestate.
- 11.2.2. Soil/Sediment 25 mL of the soil/sediment digestate is aliquoted to a 50 mL centrifuge tube. 0.5 g of Urea is added followed by 20 mL of concentrated HCl. The centrifuge cap is loosely placed on the tube and the sample is heated in a digestion hot-block at 50°C for 30 minutes. After cooling the sample is diluted to 50 mL as needed resulting in a two fold dilution of the original digestate.
- 11.2.3. Tissues 8.0 mL of the tissue digestate is aliquoted to a 50 mL centrifuge tube. 0.4 g of Urea is added followed by 16 mL of concentrated HCl. The centrifuge cap is loosely placed on the tube and the sample is heated in a digestion hot-block at 50°C for 30 minutes. After cooling the sample is diluted to 40 mL as needed resulting in a five fold dilution of the original digestate.

11.3. Standard Preparation

- 11.3.1. Working standards are prepared in 100 mL volumetric flasks by aliquoting 0, 0.025, 0.05, 0.25, 0.375, and 0.5 mL of 1000 ug/ L intermediate standard into 50 mL centrifuge tube containing approximately 15 mL of reagent water. When analyzing tissues, an additional low point using 0.01 mL of the 1000ug/L intermediate is prepared. The appropriate amounts of concentrated HCl and/or HNO₃ are added in order to replicate the matrix of the initial 3010A, 3050B, or tissue digests. An additional 25 mL of concentrated HCl is added and the beakers are covered with a watchglass and heated on a hotplate at 50°C of 30 minutes. After cooling the standards are quantitatively transfered to 50 mL volumetric flask and diluted to volume with reagent water.
- 11.3.2. An Independent Calibration Verification (ICV) standard is prepared by aliquoting 0.375 mL of a 1000 ug/L intermediate standard prepared from a different source than the intermediate used for the calibration standards. This standard is then processed as described above.

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11.4. Method of Standard Additions (MSA):

11.4.1. For Soil and Tissue digestions the single point MSA technique is utilized by default. The matrix of these digests has been shown to produce a low bias of varying degrees when analyzed using the Perkin Elmer hydride system. This low bias is corrected for using the MSA procedure described in section 9.10.1 of EPA method 7000B Revision 2. After the sample digestate is prepared as described above in section 11.1 of this SOP, two 10 mL aliquots are placed in separate autosampler tubes. To the MSA aliquot 0.05 mL of 1000 ppb standard is added. After the two sample aliquots are analyzed the solution concentration (C_x) can be calculated using the following equation:

$$C_{x} = \frac{S_{B}*V_{S}*C_{S}}{(S_{A}-S_{B}) V_{x}}$$

Where:

 $S_{\rm B}$ = analytical signal of parent sample

 S_A = analytical signal of MSA sample

 V_S = volume of standard added to the MSA sample

 V_X = volume of sample aliquots

 C_S = concentration of spike solution

Alternately, C_X can be calculated with solution concentrations using the following equation:

$$C_{x} = \frac{C_{P} * V_{S} * C_{S}}{(C_{M} - C_{P}) V_{x}}$$

Where:

 C_P = measured concentration of the parent sample

 $C_{\rm M}$ = measured concentration of the MSA sample

 V_S = volume of standard added to the MSA sample

 V_X = volume of sample aliquots

 C_S = concentration of spike solution

Once C_X is determined the final sample concentration is calculated by the appropriate reporting software based on the initial sample aliquot and subsequent digestion and instrumental dilutions, and total solids if applicable.

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Note: Since the change of volume from spiking the MSA aliquot is only 0.5%, which is insignificant relative to the accuracy and precision of the final result, this dilution is ignored in the calculations above.

11.5. Instrument Setup

A Perkin Elmer AA200 is used in conjunction with the FIAS-100 hydride generator, and a burner head mounted quartz cell. The sample and carrier (10% HCl) flows are set at 4.2 mL/min and the borohydride (0.5% Sodium Borohydride) flow at 2.1 mL/min. The instrument is optimized to wavelength of 196.0 nm, with a slit width 1.0. The burner is ignited and the system is allowed to warm up for 10 minutes prior to starting the analysis.

CAUTION: The hydride of selenium is very toxic. Precautions must be taken to avoid inhaling the gas.

11.6. Calibration and Analysis

- 11.6.1. The sampling tube is placed into the calibration blank, allowed to come to equilibrium, and then analyzed. The remaining calibration standards are analyzed similarly in ascending order. After the calibration curve is complete the r value is calculated. If the r value is not ≥ 0.995 then the calibration is rejected and must be re-analyzed.
- 11.6.2. Immediately following the calibration the ICV solution is analyzed followed in order by an Initial Calibration Blank (ICB), Continuing Calibration Verification (CCV), Continuing Calibration Blank (CCB), and the MRL check standard (i.e. the low calibration standard). ICV and CCV recoveries must fall within ± 10% of their true value, and ICB and CCB results must be less than 3x MDL.
- 11.6.3. Once the above calibration and QC check standards have been successfully run the samples are ready to be analyzed. After a maximum of 10 samples have been analyzed an additional set of CCV and CCB standard must be analyzed using the criteria described above. If one or both of these standards are out of control the problem must be corrected, the instrument recalibrated, the initial QC check standards analyzed, and the samples following the last compliant CCV/CCB check re-analyzed.
- 11.7. List any matrix modifiers or reducing agents used in the analysis on the associated raw data

12. QUALITY CONTROL

12.1. Initial Precision and Recovery Validation

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The precision of the procedure must be validated before sample analysis, or whenever significant changes to the procedures have been made. To do this, four water samples are spiked with the LCS spike solution, then prepared and analyzed.

12.2. Method Detection Limits

- 12.2.1. A method detection limit (MDL) study must be undertaken before analysis of samples can begin. To establish detection limits that are precise and accurate, the analyst must perform the following procedure. Spike seven blank matrix (water or soil) samples at a level near, or below the MRL. Follow the analysis procedures in Section 11 to analyze the samples.
- 12.2.2. Calculate the average concentration found (x) in μg/mL, and the standard deviation of the concentrations (s) in μg/mL for each analyte. Calculate the MDL for each analyte. Refer to the CAS SOP Performing Method Detection Limit Studies and Establishing Limits of Detection and Limits of Quantification. The MDL study must be verified annually.

12.3. Limits of Quantification - LOQ

- 12.3.1. Method 7000B requires the laboratory establish a LOQ for each analyte as the lowest reliable laboratory reporting concentration or in most cases the lowest point in the calibration curve which is less than or equal to the desired regulatory action levels, based on the stated project requirements. Analysis of a standard prepared at the LOQ concentration levels or use of the LOQs as the lowest point calibration standard provides confirmation of the established sensitivity of the method. The LOQ recoveries must be within 30% of the true values to verify the data reporting limit. Refer to the CAS SOP Performing Method Detection Limit Studies and Establishing Limits of Detection and Limits of Quantification.
- 12.4. Ongoing QC Samples required are described in the CAS-Kelso Quality Assurance Manual and in the SOP for Sample Batches. Additional QC Samples may be required in project specific quality assurance plans (QAPP). For example projects managed under the DoD ELAP must follow requirements defined in the DoD *Quality Systems Manual for Environmental Laboratories*. General QA requirements for DoD QSM are defined in the laboratory SOP, Department *of Defense Projects Laboratory Practices and Project Management (ADM-DOD)*. General QC Samples and their default control criteria are:

12.4.1. Method Blank

12.4.1.1.A method blank is extracted and analyzed with every batch of 20 (or fewer) samples to demonstrate that there are no method interferences. If the method blank shows any hits above the MRL for standard applications, or ½ the MRL for DoD projects, corrective action must be taken.

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Corrective action includes recalculation, reanalysis, system cleaning, or reextraction and reanalysis. Reanalysis may only be done once.

12.4.2. Lab Control Sample (LCS)

- 12.4.2.1. The laboratory control sample for water samples is composed of analyte-free water into which Selenium is spike. The laboratory control sample for soils and tissues consists of an appropriate reference material (e.g. ERA DO65-540 for soils, NRCC TORT-3 for tissues). The LCS is designed to monitor the accuracy of the procedure. The concentration of the spike in the LCS matrix should be at 5 to 10 times the MRL or at levels specified by a project analysis plan.
- 12.4.3. A lab control sample (LCS) must be prepared and analyzed with every batch of 20 (or fewer) samples. Calculate the LCS recovery as follows:

$$R = X/TV \times 100$$

Where X = Concentration of the analyte recoveredTV = True value of amount spiked

The acceptance criterion is **80-120%**. Acceptance limits for other reference materials is specific to the material used. Also, other project-specific limits may be required. If the LCS fails acceptance criteria, corrective action must be taken. Corrective action includes recalculation, reanalysis, or re-extraction and reanalysis.

12.4.4. Matrix Spike

12.4.5. A matrix spike (MS) must be prepared and analyzed with every batch of 20 (or fewer) samples. The MS is prepared by adding a known volume of the matrix spike solution to the sample and determining the spiked sample concentration. Calculate percent recovery (%R) as:

$$\%R = \frac{X - XI}{TV} \times 100$$

Where X = Concentration of the analyte recovered

X1 = Concentration of unspiked analyte

TV = True value of amount spiked

12.4.6. The acceptance limits for the MS is 75-125% for all matrices. Also, other project-specific limits may be required. If the MS recovery is out of acceptance limits for reasons other than matrix effects, corrective action

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must be taken. Corrective action includes recalculation, reanalysis, or repreparation and reanalysis.

12.4.7. A Duplicate sample is prepared and analyzed one per batch, or per 20 samples. Calculate Relative Percent Difference (RPD) as:

$$RPD = \frac{|RI - R2|}{(RI + R2)/2} \times 100$$

Where R1= result for the sample R2= result for the sample duplicate

The RPD criterion is 20%. If outside the limit, redigest the sample batch. Determine if the sample is non-homogenous and redigest if it is homogenous.

- 12.5. Recovery test (post-digestion spike)
 - 12.5.1. The recovery test must be done on all water samples within a digestion batch were that batch's MS fails.
 - 12.5.2. The same sample from which the MS/MSD aliquots were prepared (assuming the MS/MSD recoveries are unacceptable) should also be spiked with a post digestion spike. Otherwise another sample from the same preparation should be used as an alternative. An analyte spike is added to a portion of a prepared sample, or its dilution, and should be recovered to within 80% to 120% of the known value. The spike addition should produce a minimum level of 10 times and a maximum of 100 times the lower limit of quantitation. If both the MS/MSD and the post digestion spike fail, then matrix effects are confirmed.
- 12.6. Prior to preparation of samples, blanks should be analyzed to determine possible interferences from sample handling steps, reagents, or glassware. If the blanks show contamination, the source of the contamination should be isolated and minimized.

13. DATA REDUCTION AND REPORTING

13.1. The concentration of the analyte(s) in the sample digest (Cex) is calculated using the calibration curve. The concentration of analytes in the original samples is computed using the following equations:

Aqueous Samples:

Concentration
$$(\mu g/L) = \frac{(Cex)(Vf)(D)}{(Vs)}$$

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Where Cex = Concentration in digestate in $\mu g/mL$

Vf = Final volume of extract in mL

D = Dilution factor

Vs = Volume of sample digested, liters

Nonaqueous Samples:

Concentration (mg / Kg) =
$$\frac{(Cex)(Vf)(D)}{(W)}$$

Where Cex = Concentration in digestate in µg/mL

Vf = Final volume of extract in mL

D = Dilution factor

Weight of sample digested in grams. The wet or dry weight may be used, depending upon the specific client requirements.

- 13.2. Sample concentrations are reported when all QC criteria for the analysis has been met. Reported results not meeting QC criteria must be qualified with a standard CAS footnote.
- 13.3. Data Review

Following primary data interpretation and calculations, all data is reviewed by a secondary analyst. Following generation of the report, the report is also reviewed. Refer to the SOP for Laboratory Data Review Process for details.

- 13.4. Reporting
 - 13.4.1. Reports are generated in the MARRS or Harold reporting softwares by compiling the SMO login, sample prep database, instrument date, and client-specified report requirements (when specified). The compiled data is also used to create EDDs.
 - 13.4.2. As an alternative, reports are generated using Excel[©] templates located in R:\ICP\FORMS. The analyst should choose the appropriate form and QC pages to correspond to required tier level and deliverables requirements. The results are then transferred, by hand or electronically, to the templates.

14. CONTENGENCIES FOR HANDLING OUT-OF-CONTROL OR UNACCEPTABLE DATA

Corrective action measures applicable to specific analysis steps are discussed in the applicable section of this (and other applicable) SOP(s). Also, refer to the SOP for *Nonconformity and Corrective Action* for correct procedures for identifying and documenting such data. Procedures

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for applying data qualifiers are described in the SOP for Report Generation or in project-specific requirements.

15. METHOD PERFORMANCE

- 15.1. This method was validated through single laboratory studies of accuracy and precision. Refer to the reference method for additional available method performance data.
- 15.2. The method detection limit (MDL) is established using the procedure described in the SOP *Performing Method Detection Limit Studies and Establishing Limits of Detection andQuantification* (ADM-MDL). Method Reporting Limits are established for this method based on MDL studies and as specified in the CAS Quality Assurance Manual.

16. POLLUTION PREVENTION

It is the laboratory's practice to minimize the amount of solvents, acids and reagent used to perform this method wherever feasible. Standards are prepared in volumes consistent with methodology and only the amount needed for routine laboratory use is kept on site. The threat to the environment from solvent and reagents used in this method can be minimized when recycled or disposed of properly.

17. WASTE MANAGEMENT

- 17.1. The laboratory will comply with all Federal, State and local regulations governing waste management, particularly the hazardous waste identification rules and land disposal restrictions as specified in the CAS EH&S Manual.
- 17.2. This method uses acid. Waste acid is hazardous to the sewer system and to the environment. All acid waste must be neutralized to a pH of 2.5-12 prior to disposal down the drain. The neutralization step is considered hazardous waste treatment and must be documented on the treatment by generator record. See the CAS EH&S Manual for details.

18. TRAINING OUTLINE

- 18.1. Review literature (see references section). Review the SOP. Also review the applicable MSDS for all reagents and standards used. Following these reviews, observe the procedure as performed by an experienced analyst at least three times.
- 18.2. The next training step is to assist in the procedure under the guidance of an experienced analyst for a period of approximately two weeks. During this period, the analyst is expected to transition from a role of assisting, to performing the procedure with minimal oversight from an experienced analyst.

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18.3. Perform initial precision and recovery (IPR) study as described above for water samples. Summaries of the IPR are reviewed and signed by the supervisor. Copies may be forwarded to the employee's training file.

19. CHANGES SINCE THE LAST REVISION

- 19.1. Sec 1.3 is new.
- 19.2. Updated references to include method 7000B.
- 19.3. Sec 3.9 Added definitions for MSA.
- 19.4. Remove old section 7.2.3.
- 19.5. Sec 11.2 is new
- 19.6. Sec 11.3.1 Updated range on procedure for standard prep.
- 19.7. Sec 11.3.2 Changed ICV amt from 1 ml to 0.375 ml.
- 19.8. Sec 11.4 MSA is new
- 19.9. Sec 12.2.2 Updated MDL reference and requirement to verify annually.
- 19.10. Sec 12.3 on LOQ is new.
- 19.11. Sec 12.4 is new.
- 19.12. Sec 12.4.1 Rewritten to include DoD criteria.
- 19.13. Sec 12.4.3 and 12.4.6 Updated recovery limits to follow 7000B
- 19.14. Sec 12.4.7 Updated RPD limit to follow 7000B.
- 19.15. Sec 12.5 is new.

20. REFERENCES

- 20.1. EPA Method 7742, Revision 0, 1994
- 20.2. EPA Method 7000B, Revision 2, 1998
- 20.3. Standard Methods 3114B, 20th Edition

TABLE 1

SELENIUM MRLs, and MDLs

Analyte	Method Reporting Limit	Method Detection Limit
Water	1.0 ug/L	0.2 ug/L
Soil	0.1 mg/Kg (dry)	0.03 mg/Kg (dry)
Tissue	0.1 mg/Kg (dry)	0.05 mg/Kg (dry)

Protocol Modification Form: Fish/Decapod QAPP No. 9

Project Name and Number: Passaic RI 09.58.02.31

Material to be Sampled: Tissue

Measurement Parameter: Total metals (excluding selenium, inorganic arsenic, mercury and

methylmercury).

NIODO

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Worksheet No.15 of the Fish/Decapod QAPP states that calcium, chromium, iron, magnesium, potassium, sodium, and vanadium will be analyzed using USEPA Method SW-846 6010B, and all other metals (excluding selenium, inorganic arsenic, mercury and methylmercury) will be analyzed by USEPA Method SW-846 6020.

Reason for Change in Field Procedure or Analysis Variation:

Columbia Analytical Services, Inc (CAS, Kelso) will conduct the USEPA Method SW-846 6010B analysis for all metals (excluding selenium, inorganic arsenic, mercury, and methylmercury) on tissue samples first, and then will conduct the 6020 analysis for analytes with undetected concentrations or for analytes that have quality issues in the initial 6010B analysis.

Variation from Field or Analytical Procedure:

Special Equipment, Materials or Personnel Required:

Metals may be analyzed by either USEPA Method SW-846 6010B or 6020, and the actual analyte list for 6020 and 6010B analysis may not match what was presented in Fish/Decapod QAPP Worksheet No. 15.

None.				
	Daju.			
Initiator's Name:		Date:	4/16/10	
Project Manager:	Thera Sohn	Date:	4/27/10	
QA Manager:	Tad Kleshler	Date:	4/24/10	
USEPA Authority		Date:		

Protocol Modification Form: Fish/Decapod QAPP No. 10

Project Name and Number: Passaic RI 09.58.02.31

Material to be Sampled: Tissue

Measurement Parameter: Processing and preparation of tissue samples for analysis.

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Addendum to Attachment O of the Fish/Decapod QAPP.

Reason for Change in Field Procedure or Analysis Variation:

Revisions to Attachment O of the Fish/Decapod QAPP were requested by The Louis Berger Group, Inc. as a result of their March 10, 2010 crab processing audit of Alpha Analytical. Modifications to the Addendum to Attachment O were made to accurately describe the crab and fish tissue processing methods.

Variation from Field or Analytical Procedure:

The revised Addendum to Attachment O (Revision 1, 5/21/10), which is attached to the protocol modification form, now describes the following:

- 1. Alpha Analytical follows their own SOP for decontamination procedures during tissue processing (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 3, 4/29/10) rather than those described in Attachment I.
- 2. The text was clarified to state that Alpha Analytical will follow their SOP (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 3, 4/29/10) to create the rinsate blank. Please note that the rinsate blank includes a rinse of the powder-free latex gloves that are used during processing.
- 3. To access the internal tissue of the crab, the carapace is removed by cutting rather than pulling apart the crab by hand.
- 4. Crab carcass tissue has been defined to include gills, stomach, heart, intestines, cartilage, testes, eggs, and the soft part of the undercarriage where the stomach is attached. The carcass does not include the carapace (or soft-shell if molting), chiliped shell, or leg shells.
- 5. The removal of crab legs is described in addition to the removal of claws.
- 6. Dissection equipment is now more accurately described as stainless steel tools rather than stainless steel knives and spoons.
- 7. Rather than removing damaged crabs from the composite, the protocol of notifying Windward is described.
- 8. The thaw time of 7 hours was defined for blue crab specimens.
- 9. More detail was added to describe the processing of all crab tissue types, including hepatopancreas/muscle, muscle-only, carcass, and hepatopancreas.
- 10. The order of the fish dissection procedure was changed so that the cut behind the gill cover occurs before cuts are made near the dorsal fins.
- 11. Text was added to Figure 2 to clarify that fish are rinsed with deionized water prior to processing, and that the skin of scaleless fish can be removed after filleting if necessary.

12. More detail was added to describe the procedure for packing and shipping the samples, including the addition of the temperature blank.

Special Equipment, Materials or Personnel Required:

All necessary equipment is summarized in the revised Attachment O (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 3, 4/29/10)

Initiator's Name:	DODL.	Date:	5/21/10
Project Manager:	Lina Sohn	Date:	5/21/10
QA Manager:	Jad Kleshler	Date:	5/21/10
USEPA Authority:		Date:	

Revision Number: 1
Revision Date: 05/21/10

Addendum to Attachment O Revision 1

Revision Date: 05/21/10

I. Introduction

Attachment O (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 3, April 29, 2010) presents the laboratory SOP for the processing and preparation of fish and decapod tissue samples, including rinsate blank preparation and decontamination of tissue processing equipment, for the Lower Passaic River Restoration Project (LPRRP) tissue samples. The project-specific SOP for decontamination procedures of field equipment are presented in Attachment I. This addendum to Attachment O presents additional project-specific details on the process of how sample type (e.g., composite vs. individual) will be determined and additional details on preparing specific samples in the laboratory not specified in the laboratory SOP (Attachment O). If there is a discrepancy between the laboratory SOP (Attachment O) and the Addendum to Attachment O, the Addendum to Attachment O will be followed.

II. Summary of process for determining tissue samples for analysis

Figure 1 presents the general process of how samples will be collected and prepared for analysis.

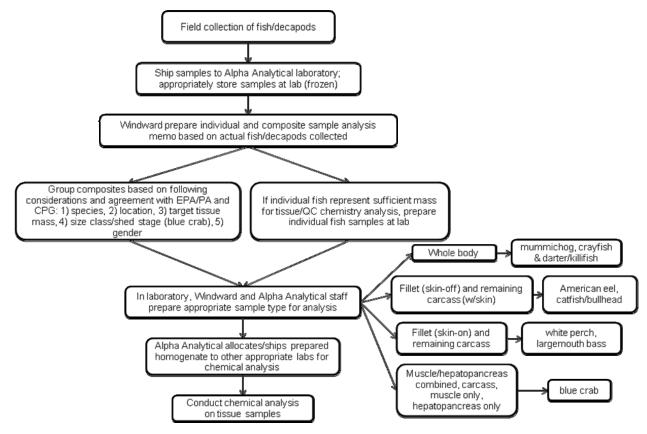


Figure 1. General process for preparing fish and decapod tissue samples for analysis

All sample preparation (e.g., compositing and homogenization) will occur at the analytical laboratory. Once the fish and decapods samples are all collected and submitted to the laboratory, Windward will prepare an individual and compositing sample analysis memorandum that will provide the plan for chemical analysis of the individuals collected. If necessary, composites will be done on a species-specific and reach-specific basis (where possible). Also considered in the compositing design will be the size class (individuals included in a given composite will be of similar size so that the smallest individual in a composite is no less than 75% of the length of the largest individual (USEPA 2000b)), targeted tissue mass needed for chemistry/QC analysis, and gender of individual organisms. Per request of USEPA, individual fish that have sufficient mass for meeting analytical and QC requirements will be analyzed as individuals.

Any composite samples will follow the compositing design presented in Table 1. A summary of the targeted types of tissue to be collected per species is also presented in Table 1. Several species will be processed on a whole-body basis; however, some species will be separated into components (e.g., fish fillet and carcass and blue crab tissue components). The decision to analyze fish species as skin-on or skinless fillets is based on USEPA guidance and typical consumption practices (USEPA 2000). Scaled fish (including perch and largemouth bass) will be analyzed as skin-on fillets after removing scales. Scaleless fish (including catfish, brown bullhead, and eel) will be analyzed as skinless fillets.

The actual number of fish or decapods that will make up each sample will be determined based on the sizes and numbers of the organisms that are collected in the field. However, a balanced sample design is sought to optimize the statistical power of the tissue datasets. For all composites, multiple individuals per sample are targeted to meet the anticipated minimum sample mass requirements (150 g pre-homogenization and 130 g post-homogenization). Based on historical sampling, several individuals may be sufficient for most species to achieve sufficient tissue mass for analytical and QC requirements; however, for decapods and benthic omnivore fish (mummichog and darter or killifish), it is anticipated that a larger number of individuals per composite will be required. It should also be noted that additional tissue mass will be needed for certain samples to accommodate USEPA split sample objectives.

Once the individual and composite sampling analysis memorandum is approved by USEPA, sample homogenates will be prepared in the laboratory based on species-specific sample types as presented in Table 1. For whole-body, fillet, carcass, soft, or edible muscle tissue composite samples, the sample identification scheme is as follows (also described on QAPP Worksheet No. 27):

- The first five characters will be "LPR" to identify the project area (Lower Passaic River) and the reach (i.e., 1 to 8) and, if relevant, target area (e.g., A, B, C).
- The next set of alphanumeric characters will identify the fish or decapod crustacean species by its scientific (Latin binomial) name and tissue type. Tissue types will be one of the following codes: "WB" for whole-body tissue, "FT" for fillet tissue, "CT" for carcass tissue, "ST" for (all) soft tissue, "MH" for muscle/hepatopancreas combined tissue, "HT" for hepatopancreas tissue (if included separate from soft tissue), or "MT" for (edible) muscle tissue.
- The next set of alphanumeric characters will be "Comp" to identify the composite sample, followed by a two-digit sequential number within the sampling area.
- For example, the first largemouth bass (*Micropterus salmoides*) fillet tissue composite sample from sampling area 2 would be identified as "LPR2-MSFT-Comp01."

The general sampling identifiers for each sample is presented in Table 1.

All relevant information for each composite and individual sample will be recorded electronically on the Composite Sample Form (Attachment F) and included as an appendix in the final data report.

Table 1. Summary of compositing per sample type for fish and decapod crustacean tissue collection

Feeding Guild ^a	Target Species	Zone ^b	Target Length (in.) ^c	Average Individual Length (in.) ^d	Average Individual Weight (g) ^d	Type of Sample	No. of Samples per Zone	Total No. of Analytical Samples	Estimated No. of Individuals per Sample ^e	Composite Sample Identification ^f	Alpha SOP Section Reference (Attachment O)		
Benthic omnivore-	mummichog	estuarine	≤ 5	2.6 (67 mm; male), 2.8 (71 mm; female)	5 (male), 6 (female)	whole body	39	39	30	LPR"XX"- FHWB- Comp"XX"	14.2 (fish tissue preparation)		
forage fish	darter or killifish species	fresh- water	≤ 5	ND	ND	whole body	42	42	30	LPR"XX"- "XX"WB- Comp"XX"	14.2 (fish tissue preparation)		
Invertivore channel catfish or brown bullhead	white perch	e perch estuarine ≥ 8 ⁹	estuarine ≥ 8 ⁹	8.1 (206 mm)	,	,	161	skin-on fillet (scales removed)	24	48	3	LPR"X"-MAFT- Comp"XX"	14.2 (fish tissue preparation); 14.4 (fillet)
	·		illill)				mm)	111111)		carcass ^h	24		
	catfish or brown	fresh- water ≥ 12 s	≥ 12 or	7.6 (193 mm) (catfish);	78 (catfish);	skinless fillet	26	52	6 (catfish)	LPR"X"- "XX"FT- Comp"XX"	14.2 (fish tissue preparation); 14.3 (removal of skin); 14.4 (fillet)		
			20	mm) (bullhead)	,	(bullhead)	carcass with skin ^h	262		2 (bullhead)	LPR"X"- "XX"CT- Comp"XX"	14.2 (fish tissue preparation)	

Feeding Guild ^a	Target Species	Zone ^b	Target Length (in.) ^c	Average Individual Length (in.) ^d	Average Individual Weight (g) ^d	Type of Sample	No. of Samples per Zone	Total No. of Analytical Samples	Estimated No. of Individuals per Sample ^e	Composite Sample Identification ^f	Alpha SOP Section Reference (Attachment O)
	American	a atuarina	.1	14 (366	400	skinless fillet	24	10	4	LPR"X"-ARFT- Comp"XX"	14.2 (fish tissue preparation); 14.4 (fillet)
eel	estuarine	≥ 12	mm)	120	carcass with skin ^h	24	48	4	LPR"X"-ARCT- Comp"XX"	14.2 (fish tissue preparation)	
Carnivore/ piscivore		th fresh- water	1 21/	ND	ND	skin-on fillet (scales removed)	26	52	2	LPR"X"-MSFT- Comp"XX"	14.2 (fish tissue preparation); 14.4 (fillet)
							carcass ^h	26			LPR"X"- MSCT- Comp"XX"

Feeding Guild ^a	Target Species	Zone ^b	Target Length (in.) ^c	Average Individual Length (in.) ^d	Average Individual Weight (g) ^d	Type of Sample	No. of Samples per Zone	Total No. of Analytical Samples	Estimated No. of Individuals per Sample ^e	Composite Sample Identification ^f	Alpha SOP Section Reference (Attachment O)
Epibenthic omnivore blue crab			≥ 3 – 4.5 ⁱ	4.7 (119 mm)	103	muscle/ hepato- pancreas combined ^j	24	63	8	LPR"XX"- CSMH- Comp"XX"	14.7 (crab tissue preparation); 14.7.6 (crab tissue); 14.7.7 (crab hepatopancreas tissue preparation)
	blue crab	estuarine				carcass ^j	24		9	LPR"XX"- MSCT- Comp"XX"	14.7 (crab tissue preparation); 14.7.6 (crab tissue)
						muscle only ^j	12		12	LPR"XX"- CSMT- Comp"XX"	14.7 (crab tissue preparation); 14.7.6 (crab tissue)
						hepato- pancreas only ^j	3		28	LPR"XX"- CSHT- Comp"XX"	14.7.7 (crab hepatopancreas tissue preparation)
		fresh- water	≥ 3 − 4.5 ⁱ	4.7 (119 mm)	103	muscle/ hepato- pancreas combined ^j	17	30	8	LPR"XX"- CSMH- Comp"XX"	14.7 (crab tissue preparation); 14.7.6 (crab tissue); 14.7.7 (crab hepatopancreas tissue preparation)
	blue crab ^k					muscle only ^j	9		30 12	12	LPR"XX"- CSMT- Comp"XX"
						hepato- pancreas only ^j	4		28	LPR"XX"- CSHT- Comp"XX"	14.7.7 (crab hepatopancreas tissue preparation)
	crayfish	fresh- water	≥2	ND	ND	whole body	27	27	38	LPR"XX"- "XX"WB- Comp"XX"	14.10 (macroinvertebrate preparation)

Target species are organized according feeding guild designated for USERA. The target demersal (bottom-dwelling) species for HHRA are blue crab (estuarine), American eel (estuarine) and channel catfish/brown bullhead (freshwater). The target pelagic species for HHRA are white perch (estuarine) and largemouth bass (freshwater).

- Zones represent the estuarine and freshwater habitats within the LPRSA.
- Target sizes were selected to be representative of potential prey size for those species that are only relevant to the ERA (i.e., benthic omnivore forage fish and crayfish) and representative of the minimum legal catch sizes (NJDEP 2009) and expected size preference for white perch and brown bullhead, which do not have a minimum legal catch size, for those species that are relevant to both the ERA and the HHRA (e.g., invertivore, piscivore, and blue crab). During field sampling, however, all individuals will be retained regardless of target size in the event that sufficient numbers of individuals that meet the target size requirements cannot be obtained.
- d Average weights and body lengths based on Tierra Solutions, PRSA Fish Community Data (dated 09/18/02) (Tierra Solutions 2002c).
- A minimum target pre-homogenization analytical mass of 150 g (130 g post-homogenization) is required for each sample. Based on the estimated mass of targeted species, all samples will likely be composite samples, inasmuch as sufficient mass is not expected from individual organisms to meet analytical mass requirements. This minimum target mass does not include additional mass required for QC or split samples. The sizes of all fish and decapod crustaceans collected for each sample will be evaluated prior to compositing (if necessary), and individuals included in a given composite will be of similar size so that the smallest individual in a composite is no less than 75% of the length of the largest individual (USEPA 2000b). This target size requirement will be evaluated during the sampling event in conjunction with USEPA to determine if the range of individual sizes included in a composite needs to be increased or decreased to accommodate the level of effort of the sampling event. When possible, composites will be composed of approximately equal portions of each gender. The estimated number of individuals required to obtain the minimum target tissue mass was calculated using regression equations, (if available), extracted from data collected under previous sampling efforts, or from other available information, and assumes that 30% of a fish is available for fillet. Available regression equations for estimating body weight (BW) based on body length (BL) (from BBL memo to Mark Harris and Cliff Firstenburg, March 7, 2001, except where noted):

 Mummichog BW = 10^{-2.06 + 3.27 log BL}

Mummichog BW = $10^{-2.06 + 3.27 \log BL}$ Channel catfish BW = $10^{3.256 \times \log BL}$ - 2.795 American eel BW = $10^{2.93 \times \log BL}$ - 5.55

Blue crab:

- a) Whole BW = $1.95 \times BL 188.76$
- b) Muscle weight = 1.36 x BL 143.51
- c) Hepatopancreas weight = 0.092 x BL 5.23
- d) Muscle + hepatopancreas weight: sum of muscle and hepatopancreas weights
- b) Carcass weight: whole BW muscle + hepatopancreas weight
- The six characters following "LPR" identify the two-digit code for the reach where the sample was located in the LPRSA, the two-digit code for the scientific (Latin binomial) name of the species, and the two-digit code for the tissue type. The composite number (followed by "comp" in the above table) will be assigned sequentially.
- There is no legal minimum catch size designated for white perch or brown bullhead. Therefore, this target size of 8 in. is based on an assumed meaningful target size for human consumption and the results of the 2000-2001 creel/angler survey (i.e., 44 white perch ranging in size from 4 to 10 in. were reportedly caught and kept by LPR anglers) (Desvousges et al. 2001).
- Carcass tissue will be composed of the remaining (non-fillet) portion. Tissue type concentrations will be combined mathematically (proportionally to their average weights in each species) to calculate whole-body concentrations.
- Target size is dependent on "shed stage" of blue crab, for which the legal minimum is 3 in. for shedders, 3.5 in. for softshell, and 4.5 in. for hardshell (http://www.scottsbt.com/fishids/regsrecs/regsNJ.htm).
- Blue crab muscle/hepatopancreas combined and muscle-only tissue samples are to satisfy HHRA data needs; carcass (i.e., non-edible soft tissue) and muscle/hepatopancreas combined tissue samples will be combined mathematically to yield all soft tissue concentrations for the ERA. Because crayfish is the target ERA species for the freshwater zone, carcass tissue samples are not required for this zone. The HHRA will use data from combined blue crab

muscle/hepatopancreas samples as the basis for quantitatively evaluating the RME of individuals under current and future exposure scenarios for both cancer and non-cancer health effects, following USEPA Superfund guidance, guidelines, and policies. Risks associated with the consumption of hepatopancreas-only and muscle-only tissue will be discussed qualitatively in the uncertainty section of the HHRA.

^k Blue crab samples may be collected from the freshwater zone if sufficient blue crab are encountered in the freshwater zone.

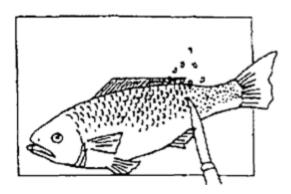
RM - river mile

ND - no data

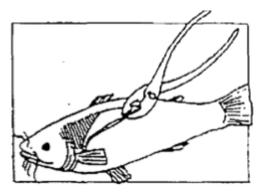
III. Additional details on fillet sample preparation

The laboratory procedure for tissue preparation and homogenization is presented in the Attachment O prepared by Alpha Analytical Laboratory (Tissue Preparation and Homogenization SOP, OP-003, Revision 3, April 29, 2010). Fish fillet preparation procedures are presented in Figure 1 (Malcolm Pirnie et al. 2006). White perch and largemouth bass fillets will be prepared with skin remaining on but scales removed.

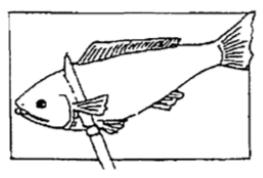
Figure 2: Fish Fillet Preparation Procedures



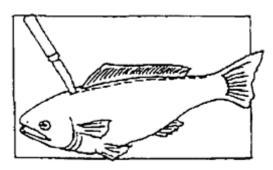
1. Removing Fish Scales: Rinse fish with deionized water. Remove the scales (by scraping with the edge of a knife) and rinse the fish with deionized water. Scales are not included in the carcass tissue.



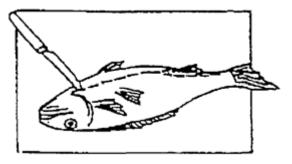
1b. Removing Skin on Scaleless Fish: Rinse fish with deionized water. Cut the skin behind the gill cover. Using a knife blade, pliers or other cleaned utensils, pull the skin off towards the tail of the fish. Skin can be removed after filleting if necessary. Note: This step applies only to catfish and other scaleless fish.



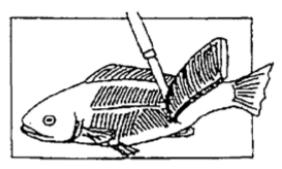
2. To fillet the fish, make a cut behind the entire length of the gill cover, cutting through the skin and flesh to the bone.



3. Make a shallow cut through the skin (on either side of the dorsal fin) from the top of the head to the base of the tail.



4. Make a shallow cut along the belly from the base of the pectoral fin to the tail. A single cut is made from behind the gill to the anus and then a cut is made on both sides of the anal fin. Do not cut into the gut cavity as this may contaminate fillet tissue.

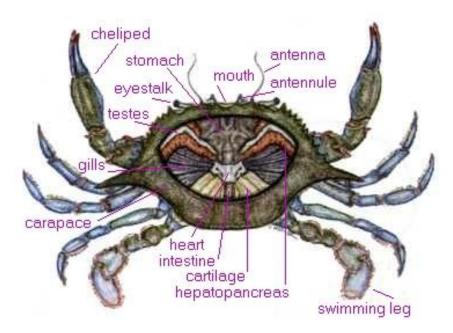


5. Remove the fillet.

IV. Additional details on blue crab sample preparation

The laboratory procedure for blue crab tissue preparation and homogenization is presented in the Attachment O prepared by Alpha Analytical Laboratory (Section 10.3.6.2 of Attachment O). Crab will be separated into several tissue type samples (Table 1). The anatomy of the blue crab is presented in Figure 3.

Figure 3. Anatomy of blue crab



Graphic courtesy of Virginia Sea Grant

Partially thaw the crab samples by removing the crab samples from the freezer and placing them in a refrigerator for approximately 7 hours prior to processing. This time can be adjusted based on the size of the individual crabs in the composite (i.e., longer time for larger than average specimens, shorter time for smaller than average specimens). Once removed from refrigerated storage, crabs can be placed on ice as needed to slow the thawing process.

Crabs will be dissected into muscle/hepatopancreas, muscle-only, hepatopancreas-only, and carcass tissues according to the USEPA approved compositing scheme. The crab specimen mass (whole body), specimen tissue mass, post-homogenization composite mass, and the mass partitioned into each container for analysis will be determined. The following protocols shall be implemented, as practicable, for preparing crab tissue samples.

- 1. Prior to removal of tissues, rinse each crab with de-ionized water to remove any attached sediment. In addition, examine each crab for damage to the carapace. Notify Windward if crabs exhibit extensive damage (i.e., cracks or holes). Once dry, weigh the individual crabs and record the weight on the processing form. Record any damage to the crab. Weigh the clean glass container that will be used to collect the composite tissue (composite jar). Record the weight of the composite jar and tare the balance.
- 2. Break off the chelipeds and legs at the carapace and place claws and legs aside for tissue removal. Using decontaminated stainless steel scissors or snips, cut off the carapace to expose the internal tissue.
- 3. Using a clean, decontaminated stainless steel tool, remove as much of the hepatopancreas as possible. If processing muscle-only tissue, discard the

hepatopancreas (unless paired with a hepatopancreas-only composite). If processing hepatopancreas-only tissue, place the hepatopancreas into the composite jar and record the weight of the hepatopancreas and proceed to step 6. If processing the hepatopancreas/muscle tissue, place the hepatopancreas into the composite jar and continue to add the muscle tissue to the composite jar as described below in step 4.

- 4. Following removal of the hepatopancreas, remove the muscle tissue from the thoracic cavity, claws, legs, and abdomen portions of the crab using a clean, decontaminated stainless steel tool. Place the muscle tissue in the glass composite jar. The muscle tissue can be removed from the claws by cutting the cheliped open and scraping or pulling out all muscle tissue. The muscle tissue can be removed from the legs by cutting the legs and scraping or pulling out all of the tissue. Place the muscle tissue into the composite jar (with hepatopancreas for the hepatopancreas/muscle tissue) and record the weight of the specimen tissue.
- 5. Carcass composites are always paired with the muscle/hepatopancreas tissue composites (i.e. same crabs are used for both). For the carcass composites, weigh another clean glass composite jar. Record the weight and tare the balance. Remove all remaining soft-tissue from the crab, including the gills, stomach, heart, intestines, cartilage, testes, eggs, and the soft part of the undercarriage where the stomach is attached. The carcass does NOT include the carapace (or soft-shell if molting), cheliped shells, or leg shells. Using a clean, decontaminated stainless steel knife or equivalent, cut the carcass tissue into small pieces. Place the carcass tissue in the composite jar and record the weight of the tissue.
- 6. Repeat the above steps for each crab in the composite. For a given composite, all composite tissue should be placed into one clean glass composite jar to minimize sample loss. After the final component of the composite is weighed the balance should be tared so that the weight of the post-homogenization mass can be determined.
- 7. Homogenize the tissue samples in the glass composite jar using homogenization equipment (e.g., a Tissuemizer with stainless steel blade).
- 8. Weigh the composite jar containing the homogenized tissue and subtract the tare weight of the composite jar to calculate the homogenized composite mass. Record the homogenized composite mass on the sample processing form. Take a photograph of the homogenized composite.
- Distribute the homogenized composite tissue into clean glass containers for each laboratory and record the weight partitioned into each container. Contact Windward if the post-homogenization minimum mass requirement is not met for the composite and freeze the labeled composite until further instruction from Windward.
- Place each container in a plastic bag and ensure that either the sample jar or bag is appropriately labeled. Place the jar in the freezer until ready for shipment/courier pick-up.

V. Additional details on preparing tissues for shipment

- 1. Wrap each bagged sample jar in bubble wrap and secure with tape or place sample jar in a bubble bag and seal.
- 2. Fill temperature blank with water and freeze. Once frozen, place the temperature blank container inside the cooler among sample jars.
- 3. Complete the appropriate chain-of-custody form for each sample container. Place chain-of-custody in a small plastic bag inside the cooler.
- 4. Pack the samples in a cooler containing wet and dry ice. Ensure that the dry ice does not physically touch the sample jars. Ensure the appropriate labels are applied to the cooler for the dry ice documentation.
- Sign, date, and affix custody seals to the top of the cooler. Send the cooler via overnight delivery (avoid sending on Friday for Saturday delivery whenever possible).

VI. References

Desvousges WH, Kinnell JC, Lievense KS, Keohane EA. 2001. Passaic River Study Area creel/angler survey: data report. Triangle Economic Research, Durham, NC.

Malcolm Pirnie, Earth Tech, Battelle. 2006. Lower Passaic River Restoration Project. Draft field sampling plan. Volume 2. Prepared for US Environmental Protection Agency, US Army Corps of Engineers, and New Jersey Department of Transportation/Office of Maritime Resources. Malcolm Pirnie, Inc., White Plains, NY; Earth Tech, Inc., Bloomfield, NJ; Battelle, Stony Brook, NY.

NJDEP. 2009. Division of Fish & Wildlife regulations: New Jersey Permanent Statute Title 23 - fish and game, wild birds and animals [online]. New Jersey Department of Environmental Protection, Trenton, NJ. Updated January 21, 2009. [Cited March 9 2009.] Available from: http://www.state.nj.us/dep/fgw/njregs.htm#fishing.

Tierra Solutions. 2002. Passaic River Study Area fish community data. September 18, 2002. Tierra Solutions, Inc., Newark, NJ.

USEPA. 2000. Guidance for assessing chemical contaminant data for use in fish advisories. Volume 1: Fish sampling and analysis. Third ed. EPA 823-B-00-007. US Environmental Protection Agency, Washington, DC.



Protocol Modification Form: Fish/Decapod QAPP No. 11

Project Name and Number: Passaic RI 09.58.02.31

Material to be Sampled: Tissue

Measurement Parameter: Processing and preparation of tissue samples for analysis.

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Attachment O of the Fish/Decapod QAPP (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 0.0, 4/25/92).

Reason for Change in Field Procedure or Analysis Variation:

Revisions to Attachment O of the Fish/Decapod were requested by The Louis Berger Group, Inc. as a result of their March 10, 2010 crab processing audit of Alpha Analytical. The revised Attachment O (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 3, 4/29/10) is attached to this protocol modification form.

Variation from Field or Analytical Procedure:

Modifications were made to Attachment O to accurately describe the crab and fish tissue processing method. Page 1 of the revised Attachment O (Alpha Analytical's Tissue Preparation and Homogenization SOP, OP-003, Revision 3, 4/29/10) describes the revisions made to the SOP. The SOP was revised as follows:

- 1. Section 2 was revised to include carcass as a type of fish tissue.
- 2. Pliers, electric grinder, glass weighing dish/jar, camera, ruler, powder-free latex gloves, paper towels, and a description of the dissection tools were added to Section 7.
- 3. The procedure to generate a rinsate blank was added to Section 9.1.1.
- 4. Generator probes were added to the list of equipment that should be washed in Section 10.1.1.
- 5. The statement that described the cleaning procedure for organic analyses only was removed from Section 10.1.2.
- 6. Section 10.3.4 was revised to include project-specific weight determinations, photo of fish with ruler, and clarification of tools used to skin fish. The description of using aluminum foil/plastic wrap to cover the balance was removed from Section 10.3.4.
- 7. Section 10.3.4.5 was revised to include clarification of homogenization for whole body, fillets, and carcass tissue.
- 8. The text "Teflon covered spatula" was removed from Sections 10.3.5.6, 10.3.6.1.3, and 10.3.7.2.
- Text was added to Section 10.3.6.2.1 to remove and discard eggs from female crabs (note that Addendum to Attachment O overrides this procedure to include eggs in carcass tissue).
- 10. Text was added to Section 10.3.9.3.1 that details the procedure to remove eel skin.
- 11. Method Performance Section 13.1 and 13.2 were modified to indicate that they are not applicable.

Special Equipment, Materials or Personnel Required:

All necessary equipment is summarized in Section 7 of the revised Attachment O (Revision 3, dated 4/29/10).

Initiator's Name:	DBDC.	Date:	4/29/10
Project Manager:	Kina Sohn	Date:	4/29/10
QA Manager:	Tad Kleshler	Date:	4/29/10
USEPA Authority:		Date:	

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Tissue Preparation and Homogenization

References: This standard operating procedure (SOP) is a performance-based method. This SOP describes the procedure as developed by Alpha Analytical.

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ISSUE AMENDMENTS

Changes since last issue:

Section 2: Add of carcass as type of fish tissue.

Section 7: Addition of sections for pliers, electric grinder, glass weighing dish, camera, ruler, latex gloves – powder free, paper towels.

Section 7.3: Modification to include all dissection tools and utensils which may be utilized in processing.

Section 9.1.1: Addition of procedure for generation of Rinseate Blanks.

Section 10.1.1: Addition of generator probes.

Section 10.1.2: Removal of 'organic analysis only' statement.

Section 10.1.3: Changed to Section 10.1.2.1.

Section 10.3.4: Addition option for project-specific sample weight determinations; removal of use of aluminum foil/plastic wrap to cover balance; addition of photo of fish with ruler; clarification of tools used to skin fish.

Section 10.3.4.5: Clarification of homogenization for whole body, fillets and carcass.

Sections 10.3.5.6; 10.3.6.1.3; & 10.3.7.2: Remove "Teflon Covered Spatula".

Section 10.3.6.2.1: Add "Remove and discard eggs from female crabs".

Section 10.3.9.3.1: Addition of procedure for removal of skin for eels.

Sections 13.1 and 13.2: Modified to not applicable.

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Tissue Preparation and Homogenization

References: This standard operating procedure (SOP) is a performance-based method. This SOP describes the procedure as developed by Alpha Analytical.

1. Scope and Application

Matrices: This method is applicable to the preparation and homogenization of plant and animal tissue including: mammals (mice or shrew etc.), fish (whole body and fillets), mollusks (mussels or clams, etc.), crustaceans (lobster or shrimp, etc.), reptiles and amphibians (frogs or turtles, etc.) macro invertebrates (benthic worms, eels, insects and other biota), and vegetation (coastal and wetland grasses)

Definitions: Refer to Alpha Analytical Quality Manual.

This preparation and homogenization procedure may be used prior to the extraction or digestion of the matrices listed above, for the ultimate detection of organic and inorganic analytes. Because this procedure is performance based, it should only be used for compounds where studies have assessed the precision, accuracy, and sensitivity of the technique relative to the project specific goals.

This method is intended to describe the preparation and homogenization procedures to be followed prior to the extraction, digestion and/or clean up of sample extracts or digestates. This procedure uses a variety of cutting and grinding equipment for size reduction, compositing and homogenization. See Section 7 for Equipment and Materials. This method is applicable to the matrices described above. The final determinative analytical methods and lists of potential target compounds are noted in the SOPs referenced below. Applicable extraction, digestion and cleanup methods include:

- Microwave Assisted Acid Digestion of Sediments, Soils, Tissues and Waters (MP-003),
- Gel Permeation Chromatography (OP-006),
- Sulfuric Acid Cleanup Method 3665A (OP-010),
- Microscale Solvent Extraction (OP-016
- Alumina Column Cleanup (OP-009).

Other applicable methods, however not included by ALPHA ANALYTICAL SOP reference, are Method 3546 - Microwave Extraction of Organic Compounds and Automated Silica Gel Cleanup for Organic Compounds. *Note:* Sample cleanup does not apply to digestates of inorganic samples for metals analysis.

Data derived from the analysis of tissue samples is generally used to determine if human health, and/or ecological risk criteria have been exceeded.

The data report packages present the documentation of any method modification related to the samples tested. Depending upon the nature of the modification and the extent of intended use, the laboratory may be required to demonstrate that the modifications will produce equivalent results for the matrix. Approval of all method modifications is by one or more of the following laboratory personnel before performing the modification: Area Supervisor, Department Supervisor, Laboratory Director, or Quality Assurance Officer.

This method is restricted to use by or under the supervision of experienced analysts.

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2. Summary of Method

This method describes the tissue processing and homogenization procedures to be used prior to the extraction/digestion and analysis of the sample. Samples are best processed when partially frozen. Samples may be re-frozen after processing pending extraction or digestion.

Fish tissue samples (whole bodies, carcass or fillets) are weighed and the weights are recorded following project specifications. Measurements may be taken as needed depending upon the project specifications. The fish may be processed with the skin on or off, depending upon the project specifications. If fillets are to be removed and processed separately, this is generally done after the removal of the skin, however fillets can be processed with the skin on if requested. If compositing is required, the identified samples for composite are filleted or skinned prior to compositing homogenization. The carcass of the fish (after removal of the fillet) may be maintained for separate homogenization and analysis if requested.

Mammals such as mice, shrew or other rodents, must be prepared in a glove box due to the potential health hazards associated with mammal tissue. All project specific sample preparation (weighing, skinning, compositing and homogenization) is performed in the glove box. Waste from the processing must be containerized and treated with bleach before disposal. Waste from the processing must be containerized before disposal. The outside surfaces of the sample containers must be disinfected before removal from the glove box.

Mollusks, crustaceans and other like invertebrates are measured and weighed prior to processing. Mollusks must be removed from their shells before processing. Due to the low weight of a single mollusk, crustacean or invertebrate, these sample types are generally composited with others of the same species and/or sampling area prior to homogenization. Gender determination may need to be performed with larger crustaceans such as lobsters. This is done prior to any processing and recorded. Additionally, lobsters are usually dissected, and the edible meat (tail and claw) is removed for homogenization. Certain internal organs such as the hepatopancreas may need to be processed separately. If crabs are being processed, the legs, claws and body cavity are generally homogenized together.

Reptiles and amphibians are generally processed as whole body samples. Depending upon the size, the specimen may need to be cut into small pieces and processed in part, then re-combined as a single sample. Due to the thickness of the skin of most reptiles, such as frogs, it is recommended that these be processed without the skin. If the skin must be processed, ensure that the grinder or processor blades are sharpened before use. The blades may need to be resharpened between every few samples as needed. Turtles must be removed from the shell prior to processing by digging out the head and legs, and as much of the body as feasible.

Macro invertebrates such as worms, eels, insects or benthic biota are generally processed as whole body samples. Depending upon the size, the specimen may need to be cut into small pieces and processed in part, then re-combined as a single sample. Due to the low weight of a single invertebrate, these sample types are generally composited with others of the same species and/or sampling area prior to homogenization.

Plants are rinsed prior to processing to remove soil, silt, small insects or other debris. Depending upon the size of the plant and the leaves, the sample may be processed mechanically, or may have to be cut into small pieces by hand. Plants can be processed either wet or dry, depending upon project specifications.

After tissue processing, organic samples will be extracted and the extracts cleaned if needed, then analyzed by the determinative analytical procedure. Inorganic digestates do not require further clean up and will only undergo analysis by the determinative analytical procedure.

2.1 Method Modifications from Reference

None.

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3. Reporting Limits

Not applicable to this method. Refer to the analytical method SOPs.

4. Interferences

Solvents, reagents, processing equipment and glassware may introduce interferences. These must be demonstrated to be free of interferences by the analysis of a method blank. See the ALPHA ANALYTICAL SOP *Reagent, Solvent and Standard Control* (G-008) and *Laboratory Glassware Cleaning* (G-002), for additional details.

Field Blanks are recommended to ensure that the field sample packing materials are not a potential source of contamination. This can be done by pouring contaminate free water over the sample collection material and collecting the water in an appropriate container with preservative as needed (*i.e.*, 1L glass amber bottle for organic and a 500mL polyethylene bottle with 1:1 HNO₃ preservative for metals).

Equipment used to process samples for *organic* analyses should be made of stainless steel, Teflon, ceramic, or PTFE. Tissue should be removed with clean, high-quality, corrosion-resistant stainless steel, ceramic or titanium instruments, knives and blades. Homogenates must be stored in borosilicate glass, quartz, or PTFE containers with PTFE-lined lids.

Many interferences can be removed by sample cleanup. The organic cleanup methods performed by ALPHA ANALYTICAL include those listed in Section 1. Only appropriate cleanup techniques must be performed based on the suspected interference and the compounds of interest. For example, sulfuric acid cleanup is not applicable to samples requiring pesticide analysis because this rigorous cleanup will destroy the majority of pesticides.

Soapy residue may result in basic conditions on glassware and may cause degradation of the pesticides Aldrin and Heptachlor, some organophosphorous pesticides, and can cause metals instrument interferences. All glassware must be rinsed thoroughly with deionized water and solvents/nitric acid to remove soapy residue. See the ALPHA ANALYTICAL SOP (G-002) *Laboratory Glassware Cleaning*, for additional details.

5. Health and Safety

The toxicity or carcinogenicity of each reagent and standard used in this method is not fully established; however, each chemical compound should be treated as a potential health hazard. From this viewpoint, exposure to these chemicals must be reduced to the lowest possible level by whatever means available. A reference file of material safety data sheets is available to all personnel involved in the chemical analysis. Additional references to laboratory safety are available in the Chemical Hygiene Plan.

All personnel handling environmental samples known to contain or to have been in contact with municipal waste must follow safety practices for handling known disease causative agents.

6. Sample Collection, Preservation, Shipping and Handling

6.1 Sample Collection

As guidance, a minimum of 50 grams of sample must be collected for organic analyses, and 5 grams for metals analyses, in a glass jar with a Teflon or PTFE-lined screw cap. The amount of sample needed, will depend upon the project DQOs, such as reporting limits and the need for MS/MSD and/or duplicate analyses. Extra sample must be collected, if possible, to allow the laboratory adequate sample volume in case re-preparation and re-analysis is needed. Large

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whole individual fish, fillets, or vegetation may be wrapped in plastic or aluminum foil depending upon the requested analyses. (See Section 4 or additional details about allowable materials). Large crustaceans, reptiles or amphibians may be individually packed in well-labeled Styrofoam coolers.

6.2 Sample Preservation

It is recommended that samples are preserved by freezing them with dry ice at \leq -20°C. If samples are not shipped frozen, they will be stored in freezers at Alpha Analytical upon arrival, and until processing. The samples must remain frozen and maintained at \leq -20°C \pm 10°C until processing. After processing, individual sample homogenates must also be stored at \leq -20°C \pm 10°C until extraction/digestion and analysis.

6.3 Sample Shipping

Refer to Section 6.2.

6.4 Sample Handling

Sample processing and extraction/digestion hold times are suspended by freezing the sample. Hold time monitoring is resumed when samples are removed from freezers for processing and then returned to freezers pending extraction/digestion. Movement of samples into and out of freezers is tracked through LIMS. The organic hold time is 14 days from sample collection to extraction, and 40 days from extraction to analysis. The metals hold time is six months from sample collection to digestion and analysis. If mercury is to be determined, the hold time is 28 days from sample collection to digestion and analysis.

7. Equipment and Supplies

- **7.1 Cutting board:** Made of either glass or Teflon.
- **7.2 Food processor:** Black & Decker with titanium cutting blade (small).
- **7.3 Dissection Tools:** Tools may include the following utensils: knives/blades (ceramic, stainless steel, or titanium), stainless steel picks, spatulas (stainless steel or Teflon-coated stainless steel), stainless steel scissors/snips, stainless steel tweezers. (Refer to Section 4.0 for interferences and/or contamination associated with different materials.)
- 7.4 Pliers: Stainless Steel
- **7.5 Balances:** Analytical Balance with precision to 0.0001g; Top loading balance with precision to 0.01g; Top loading balance with precision to 0.2g.
- **7.6 Grinding unit:** Omni-GLH, electric, custom fitted with stainless steel or titanium interior saw tooth probes (10mm, 20mm, 45mm), or equivalent.
- 7.7 Tissuemizer: Janke & Kunkel IKA Labortechnik Ultra Turrax T25, stainless steel
- **7.8 Grinder:** LEM electric meat grinder, stainless steel (or equivalent)
- 7.9 Multi-hazard glove box: Labconco

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- 7.10 Bench liner material
- 7.11 Latex Gloves Powder Free
- 7.12 Glass weighing dish/jar, wax paper, aluminum foil, plastic wrap.
- 7.13 Camera
- 7.14 Ruler
- 7.15 Paper towels: Kim Wipes

8. Reagents and Standards

Use reagent grade or trace metals grade chemicals for all reagents. Deionized (DI) water or reagent water is ASTM Type II laboratory reagent grade water. Other grades may be used.

All reagents are stored at room temperature in flammable cabinets, unless otherwise noted. All reagents expire upon manufacturer's expiration date or one year from date of opening, whichever is sooner.

- 8.1 Methylene Chloride: ACS approved, Pesticide grade, see ALPHA ANALYTICAL SOP Reagent, Solvent and Standard Control (G-008) for additional details regarding solvent purity.
- **8.2 Methanol:** ACS approved, Purge & Trap grade, see ALPHA ANALYTICAL SOP *Reagent, Solvent and Standard Control* (G-008) for additional details regarding solvent purity.
- **8.3 Hexane:** ACS approved, Pesticide grade, see ALPHA ANALYTICAL SOP Reagent. *Solvent and Standard Control* (G-008) for additional details regarding solvent purity
- **8.4 Acetone:** ACS approved, HPLC grade, see ALPHA ANALYTICAL SOP *Reagent, Solvent and Standard Control* (G-008) for additional details regarding solvent purity.
- **8.5** Nitric acid 50% (1:1): Add 500 mL concentrated HNO₃ to 400 mL of reagent water and dilute to 1 liter in an appropriate beaker or flask. For 25% HNO₃ solution: add 250 mL of concentrated HNO₃ to 400 mL of reagent water and dilute to 1 liter in an appropriate beaker or flask. Store in a corrosion-resistant cabinet.
- **8.6 10% Bleach solution:** Add 100 mL of commercial bleach to 500 mL of reagent water and dilute to 1 liter in an appropriate beaker or flask. Prepare fresh each day of use.
- **8.7 Alconox cleaning solution**. No special storage requirements. No expiration requirements.

9. Quality Control

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The laboratory must maintain records to document the quality of data that is generated. Ongoing data quality checks are compared with established performance criteria to determine if the results of analyses meet the performance characteristics of the method.

The following quality control samples mayor may not be included with each processing batch. If not included in the tissue processing steps, they must be included in the extraction/digestion batches that follow processing, or as needed, depending upon project specifications.

9.1 Blank(s)

9.1.1 Rinseate Blank/Equipment Blank or Process Blank

Rinseate/Equipment or Process blanks are generated using contaminate-free reagent (DI) water to rinse all processing equipment after completion of the cleaning procedure (see Section 10.1). The volume of water used will be based on project-specific volume requirements for requested analyses.

All processing equipment is rinsed with pre-determined volume of reagent water (DI) into a collection vessel. All rinse water is transferred from collection vessels to larger glass carboy.

Homogenizer/Generator probes are immersed in a pre-determined volume of DI water. The Homogenizing Unit will be turned on and the probe will process the DI water for a pre-determined time, based on project specifications. The DI water will then be transferred into a larger glass carboy and combined with DI from other processing equipment.

After all rinseates are collected into the glass carboy (or appropriate container), mix the DI water using a large glass stirring rod or by swirling the DI water. Transfer the water into the appropriate pre-prepared sample containers.

9.1.2 Method Blank

Not applicable to this method. Refer to analytical SOPs.

9.2 Laboratory Control Sample (LCS)

Not applicable to this method. Refer to analytical SOPs

9.3 Initial Calibration Verification (ICV)

Not applicable to this method. Refer to analytical SOPs.

9.4 Continuing Calibration Verification (CCV)

Not applicable to this method. Refer to analytical SOPs.

9.5 Matrix Spike

Not applicable to this method. Refer to analytical SOPs

9.6 Laboratory Duplicate

Not applicable to this method. Refer to analytical SOPs

9.7 Method-specific Quality Control Samples

Not applicable to this method. Refer to analytical SOPs

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9.8 Method Sequence

Not applicable.

10. Procedure

The procedures described below are general cleaning and pre-processing procedures that are to be followed regardless of the type of tissue being processed. Samples are prioritized by the Department Manager or Team Leader based on hold time and client due date. All weights, measurement and other project required observations are recorded on the Tissue Prep Log sheets.

10.1 Equipment Set-up

- **10.1.1** Wash all utensils, generator probes, sample processor (blades, blade post, cup and lid) and the cutting board(s) with an alconox solution and a sponge. Rinse thoroughly with tap water, then with DI water and allow to dry. Equipment may be dried with a paper towel, if needed.
- **10.1.2** After drying the equipment, rinse all utensils, processor parts and surfaces with Acetone followed by a rinse with methylene chloride.
 - 10.1.2.1 For <u>metal analyses only</u>, rinse all plastic and ceramic utensils with 25% HNO3 followed by another rinse with DI water. Rinse processor parts and surfaces with the alconox solution, followed by a tap water and a DI water rinse. Any metal or titanium surfaces must not come into contact with the 25% HNO3 solution as this may strip some metal alloys from these surfaces and introduce contamination.

10.2 Initial Calibration

Not applicable.

10.3 Equipment Operation and Sample Processing

- **10.3.1** Gloves must be worn when handling tissue samples.
- **10.3.2** Tissue samples should be partially thawed before starting, to the point where it becomes possible to make an incision in, or cut through, the flesh.
- **10.3.3** Note any morphological abnormalities on the processing records.

10.3.4 Fish Tissue Preparation

- **10.3.4.1** Determine the wet weight for each individual fish using a calibrated balance and appropriate weighing dish. Follow project specifications for alternate sample weight determinations.
- **10.3.4.2** Determine the length of each fish using a ruler, and record with the weight. Some measurements may, or may not be, a part of the project specifications. Additionally, a picture with a ruler in the foreground may be required. Follow project specifications.

10.3.4.3 Removal of Scales or Skin

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- **10.3.4.3.1** If required by project specifications, the scales and/or skin of the fish will be removed prior to filleting. Clean all glassware and utensils as described in Section 10.1.
- **10.3.4.3.2** Rinse the fish with DI water and dry using a paper towel. Lay the fish on the cleaned, and/or lined, cutting board

Scrape the fish from tail to head using the blade edge of a cleaned stainless steel, ceramic or titanium knife, to remove the scales. Continue until all scales are removed.

- **10.3.4.3.3** Depending upon the outward condition of the samples, the sample may be rinsed with DI water and pat dry with paper towel. Place the fish on a clean cutting board, for filleting or skinning.
- 10.3.4.3.4 To skin the fish: Using a stainless steel knife, cut the skin behind the operculum (gill cover). Using the knife blade, pliers or other cleaned utensil, pull the skin off towards the tail of the fish. If necessary, cut lightly along the inside of the skin, slowly separating the skin from the muscle tissue. Removing the skin may require cutting the skin along the backbone or underbelly of the fish. If necessary follow project specifications for weight determinations.

10.3.4.4 Filleting the Fish

- 10.3.4.4.1 Using fresh gloves and the specified knife, make a cut behind the entire length of the operculum (gill cover), making sure to cut through the skin, if still attached, and the flesh, as close to the bone as possible. Note: If the fish samples are small, and it appears difficult to fillet, or if the amount of the fillet appears to be insufficient for the analysis requested, consult the Department Manager and/or Project Manager prior to filleting. In some cases it may be necessary to homogenize the whole body.
- **10.3.4.4.2** Make a cut across the caudal peduncle (the base of the tail fin) keeping as close to the caudal (tail) fin as possible. Continue cutting along the underbelly of the fish, moving from the head to the tail.
- **10.3.4.4.3** Go back to the cut made at the beginning at the operculum, and slice down the entire length of the fish following along the backbone until reaching the cut previously made across the caudal peduncle.

Gently slide the stainless knife along the backbone of the fish and along the rib cage. Remove the fillet from the fish. Be sure to include the belly flap in each fillet and do not remove the dark muscle tissue in the vicinity of the lateral line from the light muscle tissue that makes up the rest of the muscle tissue mass.

- **10.3.4.4.4** Remove any bones that may be left attached to the fillet. Repeat the fillet steps 10.3.4.4.1 through 10.3.4.4.3, for the opposite side of the specimen.
- **10.3.4.4.5** Note in the sample processing records if the internal organs were ruptured during freezing or if inadvertent puncture of the internal organs occurred during the filleting process. If the internal organs did rupture or were punctured, notify project manager for further guidance.

10.3.4.5

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- **10.3.4.4.6** Place a glass plate on the balance. Tare the balance and record the appropriate weights in the appropriate spreadsheet or logbook as determined from the project specific QAPP. This may include weighing the fillet(s), carcass or skin.
- 10.3.4.4.7 If the fillet(s) and/or the carcass are to be homogenized immediately, proceed to Section 10.3.4.5. If not, store in the appropriate container; see Section 4 for allowable materials. Note that it may be necessary to chop the fillet(s) or carcass into smaller pieces, with the appropriately cleaned knife, before storage, and before homogenization, so the entire sample will fit into the storage container or the homogenization vessel. See the project specific QAPP for additional details.
- **10.3.4.4.8** If the samples will not be homogenized immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until homogenization

Homogenization

- **10.3.4.5.1** Allow the fillet(s), carcass or whole body to partially thaw if previously frozen.
- 10.3.4.5.2 Fillets/Skin/Whole Body: Weigh a glass jar on the balance and record the weight. Tare the same glass jar. Be sure the jar is large enough to allow headspace for freezing after sample homogenization. While wearing the appropriate gloves, place the sample on the cutting board. Using the appropriate knife, slice and cut the sample into small chucks, preferably 1" squares or less. Add the sample to the appropriate size glass container for homogenization. Record the pre homogenization weight or follow project specific QAPP. Immerse the sample into the pre-cleaned generator probe (see section 10.1). Homogenize the sample until it appears fully and consistently homogenized tuning into a fine paste. This procedure may require mixing the sample during the homogenization process with a stainless steel spatula, ensuring all sample is equally processed and no sample remains on the side of the jar.
- 10.3.4.5.3 Large Whole Body/Carcass: Large sample carcasses may need to be homogenized using a hand held grinder/ electric grinder or food processor. Add the pre-sliced sample to the pre-cleaned blender (see section 10.1) and "push" through the auger part of the grinder. Collect the sample into a pre-tared jar or glass plate. Further processing using additional equipment may be necessary to achieve a consistently homogenized sample.
- 10.3.4.5.4 After homogenization, remove as much sample from the processing equipment as possible using a stainless steel spatula or other utensil and add to the processed sample. Re-weigh the sample and record the post-homogenization weight. Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior

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to extraction/digestion, these homogenates must be thawed and rehomogenized by hand mixing prior to being extracted or digested.

- 10.3.4.5.5 Place the individual or composite homogenized samples into the appropriate glass jars to be frozen pending future extraction/digestion. If the samples will not be extracted/digested immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until extraction/digestion. All freezer logbooks must be filled out for hold time tracking purposes. Note the return of the samples to Sample Management must be documented in the LIMS Tracking log.
- **10.3.4.5.6** All utensils and equipment must be washed in between samples according to the procedures described previously in Section 10.1.

10.3.5 Mollusk Preparation

- 10.3.5.1 Wash all utensils, the cutting board, and surfaces as previously described in Section 10.1. Note the allowable materials in Section 4. Obtain samples from the Sample Management office and log them out of the freezer logbooks for hold time tracking purposes. Note removal of samples in the LIMS Tracking log.
- **10.3.5.2** If required by the project specifications, measure and record the length of the sample shell.
- **10.3.5.3** Cover the balance with the proper material as described in Section 4, and weigh and record the sample weight.
- 10.3.5.4 Wearing the proper gloves, place the sample on the cleaned cutting board. Samples should be partially thawed. If the sample is frozen, it will be difficult to break open the shell. If the sample is excessively thawed, the internal tissue will become soupy and difficult to remove.
- 10.3.5.5 If preparing *Bivalve* specimens, use the titanium knife to cut the abductor muscle by sliding the knife through the crevice where the two shells meet. Once the abductor muscle is cut the two shell pieces should come apart easily.
- 10.3.5.6 Carefully remove the top shell, and scoop out the internal tissue that is resting on the mantle. Be careful not to tip the bottom shell. If the sample is excessively thawed, the sample internal fluids may spill out of the shell. The internal fluids must be retained as part of the sample. If the bivalve is still partially frozen as suggested, the tissue should easily be removed from the shell in one piece.
- 10.3.5.7 Cover the balance with the proper material and weigh the amount of tissue obtained from the sample. Record the weight along with the information previously recorded on the processing records. The sample may now be stored pending homogenization in the appropriate jar, see Section 10.3.5.17. If the sample will be homogenized immediately, proceed to 10.3.5.13.

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- **10.3.5.8** If preparing *Gastropod* specimens, a mallet will be necessary to open the shell.
- **10.3.5.9** Place a paper towel or piece of lab mat over the shell of the Gastropod specimen
- **10.3.5.10** Holding the shell still with one hand, use the mallet to hit the paper towel that is over the shell, in order to crush the shell.
- **10.3.5.11** Using the appropriately cleaned tweezers, remove the tissue from the crushed shell pieces.
- 10.3.5.12 Cover the balance with the proper material and weigh the amount of tissue obtained from the sample. Record the weight along with the information previously recorded on the processing records. The sample may now be stored pending homogenization in the appropriate jar, see Section 10.3.5.17. If the sample will be homogenized immediately, proceed to 10.3.5.13.
- 10.3.5.13 Since the amount of tissue obtained from one bivalve or gastropod is generally small, several specimens are frequently combined to make one sample. Utensils do not need to be rinsed between the individual samples that comprise one composite, but utensils must always be rinsed in between each composite sample.
- 10.3.5.14 If several specimens will be composited to make one sample, follow the applicable Sections of 10.3.5.1 through 10.3.5.11, for each of the specimens. The tissue obtained from each specimen may be weighed and recorded individually, then totaled for the composite weight. If only one composite weight is sufficient for the project specifications, weigh the entire composite and record that weight.
- 10.3.5.15 After the tissue has been removed from all of the specimen shells for one composite or individual sample, place the tissue in the clean small processor with the titanium blade to be homogenized. Grind the sample until it appears to be fully and consistently homogenized and there are no large chunks.
- 10.3.5.16 Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. Composite homogenates must be prepared from equal weights of individual homogenates. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior to extraction/digestion, these homogenates must be thawed and rehomogenized by hand mixing prior to being extracted or digested.
- 10.3.5.17 Place the processed samples into the appropriate glass jars to be frozen for future extraction/digestion, see Section 4. If the samples will not be extracted/digested immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until extraction/digestion. Record placement of the samples in the freezer, in the freezer storage logbook, for hold time tracking. Note return of the samples to Sample Management in the LIMS Tracking log.

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10.3.5.18 All utensils and equipment must be washed in between samples according to the procedures described previously in Section 10.1.

10.3.6 Crustacean Preparation

10.3.6.1 Lobsters

- 10.3.6.1.1 Wash all utensils, the cutting board, and surfaces as previously described in Section 10.1. Note the allowable materials in Section 4. Obtain samples from the Sample Management office and log them out of the freezer logbooks for hold time tracking purposes. Note removal of samples in the LIMS Tracking log.
- 10.3.6.1.2 If project specifications require gender determination of lobsters, this must be done prior to dissecting. To determine the gender, hold the lobster by the thorax, and flip it over to examine the underneath abdomen. Just below the legs and where the abdomen division begins, there is a first pair of swimmerets. The first pair of swimmerets is what is used to distinguish the lobster's gender. If the first pair is soft, has small hairs, and the swimmerets are crossed, it is **female**. On a **male** lobster, the first pair of swimmerets is hard and stiff, and generally do not touch.
- **10.3.6.1.3** If the hepatopancreas of the lobster samples is to be analyzed, the samples should be received alive. If the samples are frozen prior to dissection the hepatopancreas could burst upon thawing making it difficult to remove. To remove the hepatopancreas, the live lobster should be placed on a cleaned cutting board. Wearing the proper gloves, one analyst holds the two chelipeds (claws) out in front of the lobster, while also holding down the lower abdomen and telson (tail). The second analyst takes a knife, and places it on the grove in the carapace (outer shell), just behind the head region. Keeping the knife at an angle, the second analyst must push down and forward to remove the head. Once the head is removed the hepatopancreas can be seen lying just under the carapace and running the length of the thorax. The hepatopancreas is generally a greenish-yellow color, but there may be some variation. Scoop the hepatopancreas out gently trying not to break it into pieces. Cover the tray of the balance with the proper material, and weigh and record the weight of the hepatopancreas on the processing record, and place it into an appropriate sample iar for freezing and future extraction/ digestion.
- 10.3.6.1.4 To remove the edible meat, remove the two chelipeds from the body of the lobster at the joint. Place a piece of lab mat or paper towel over the cheliped and pound with a mallot. Once the shell is crushed remove the meat, using the appropriately cleaned tweezers or other tool, making sure to get all the meat in the joints and arms. Cover the balance tray with the appropriate material and weigh and record the total tissue weight obtained from the two chelipeds and arms. Record this weight with the previously recorded information on the sample processing record.
- **10.3.6.1.5** Remove the abdomen and telson from the rest of the carapace by pulling the lobster apart. Using the titanium coated knife, cut through

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the center underside tissue of the lobster and laterally along the exoskeleton of the tail. Once the abdomen and tail have been cut open, separate the shell from the edible meat using cleaned utensils. Any eggs found in the female lobsters will have to be removed and discarded. Cover the balance tray with the appropriate material, and record the weight of the tissue obtained from the abdomen and telson on the processing record. The sample may now be stored pending homogenization in the appropriate jar.

10.3.6.2 Crabs

- 10.3.6.2.1 If removing tissue from *crabs* break off all legs and claws. Squeeze, pull, cut or pick all the tissue out of the legs and chelipeds. Pull apart the carapace. The carapace should be easy to remove by pulling up on the holes left from when the legs were broken off. Scoop out the tissue. Cover the balance tray with the appropriate material and record the weight of the tissue obtained from the legs, claws, and carapace on the processing record. The sample may now be stored pending homogenization in the appropriate jar, see Section 10.3.6.7. Any eggs found in the female crabs will have to be removed and discarded.
- 10.3.6.2.2 If the hepatopancreas of the crab samples is to be analyzed, the samples should be received alive. If the samples are frozen prior to dissection the hepatopancreas could burst upon thawing, making it difficult to remove. In order to remove the hepatopancreas of a frozen crab, remove the legs and claws, and then the top shell can be removed by cutting along the outside edge of the top shell. The top shell can then be removed. It is best if the crab(s) are chilled live in a refrigerator for 30-60 minutes, prior to removal of the hepatopancreas, to slow the crab's movements. To remove the hepatopancreas, the live crab should be placed on a cleaned cutting board. Wearing the proper gloves, the analyst must hold the crab still, with the claws facing away from the analyst. Then grab the back of the top shell with fingers or cleaned pliers, and pull the back shell from the crab. Once the back shell is removed the hepatopancreas can be seen lying inside the body cavity. The hepatopancreas is generally a greenish-yellow color, but there may be some variation. Scoop the hepatopancreas out gently trying not to break it into pieces. Cover the tray of the balance with the proper material, and weigh and record the weight of the hepatopancreas on the processing record. Place it into an appropriate sample jar for freezing and future extraction/ digestion.
- 10.3.6.3 Since the amount of tissue obtained from one crustacean may be small, several specimens may be combined to make one sample. Utensils do not need to be rinsed between the individual samples that comprise one composite, but utensils must always be cleaned and rinsed in between each composite sample.
- 10.3.6.4 If several specimens will be composited to make one sample, follow the applicable Sections of 10.3.6.1.1 through 10.3.6.1.5 for lobsters, or 10.3.6.2.1 through 10.3.6.2.2 for crabs for each of the specimens. The tissue obtained from each specimen may be weighed and recorded individually, then totaled for the composite weight. If only one composite

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weight is sufficient for the project specifications, weigh the entire composite and record that weight.

- After the tissue has been removed from all of the specimen shells for one composite or individual sample, grind the sample until it appears to be fully and consistently homogenized and there are no large chunks. This procedure may require mixing the sample during the homogenization process with a stainless steel spatula, ensuring all sample is equally processed and no sample remains on the side of the jar.
- 10.3.6.6 Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior to extraction/digestion, these homogenates must be thawed and re-homogenized by hand mixing prior to being extracted or digested.
- 10.3.6.7 Place the processed samples into the appropriate glass jars to be frozen for future extraction/digestion, see Section 4 for allowable materials. If the samples will not be extracted/digested immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until extraction/digestion. Record placement of the samples in the freezer, in the LIMS, for hold time tracking. Note return of the samples to Sample Management in the LIMS Tracking log.
- 10.3.6.8 All utensils and equipment must be washed in between samples according to the procedures described previously in Section 10.1. If any processing equipment comes in contact with a crab that is not going to be included in the composite, the equipment must be washed as described in section 10.1 before continuing.

10.3.7 Mammals (Mice and Shrew)

- 10.3.7.1 Wash all utensils, the cutting board, and surfaces as previously described in Section 10.1. Note the allowable materials in Section 4. Obtain samples from the Sample Management office and log them out of the freezer logbooks for hold time tracking purposes.
- 10.3.7.2 Place the first five, partially thawed samples to be processed, and all equipment needed into the glove box on a freshly laid out lab mat. Equipment needed includes:
 - Empty and pre-labeled glass sample containers for the processed homogenate.
 - PVC gloves or Latex gloves,
 - 10% Bleach solution, 25% HNO3 and methylene chloride, methanol and hexane in squirt bottles,
 - · Omni grinding unit,
 - Balance,
 - Nylon bristled brushes,
 - Ceramic, titanium,or stainless steel (organic compounds only) knives, spatulas and/or other utensils,

Cutting board (s),

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- DI water in a squirt bottle and Kim wipes,
- Laboratory waste bottles with caps.
- 10.3.7.3 Once all materials are in the glove box and set up for use, seal the transfer box and ensure the motor blower is on. Over tightening of the outer or inner door knobs is not necessary to achieve a good seal. Place your hands into the gloves attached to the glove ports and place PVC or Latex gloves over the glove port gloves for use. The outer PVC or Latex gloves will need to be changed in between each sample.
- 10.3.7.4 If the gender of the mouse or shrew needs to be determined, turn the animal over and note the length of the anus and the distance of the anus from the tail. If the anus is elongated in shape and does not touch the base of the tail, testicles and a large genital papilla are visible, and there are no nipples, the animal is **male**. If the anus is round in shape and almost touches the base of the tail and/or there are nipples (up to five sets), the animal is **female**. If the animal is very small, young or immature and a gender determination cannot be made, note that the gender is *undetermined*. Record the gender observations on the processing records.
- 10.3.7.5 If skinning of the mammal is required, carefully make an incision at the tail end and cut just below the skin along the back, from one hind leg to the other. Make another cut from one hind leg to one front leg, and repeat the cut on the other side of the animal. Starting from the tail, lift the skin flap, and carefully separate the skin from the muscle tissue below. Pull the skin forward from the tail to the head to expose the back tissue of the animal. Repeat the procedure on the stomach side of the animal. Note: it may be very difficult to remove the skin from the legs, head and the tail. If some skin cannot be removed, note this on the processing records.
- 10.3.7.6 Weigh and record the weight of the mammal on the processing records. Depending upon the size of the mammal, it may need to be chopped into small pieces before being ground. Generally, mice and shrew can be quartered before homogenization if needed.
- 10.3.7.7 Put the whole body or chopped sample into the cup of the grinding unit. Ensure the sample is in contact with the blades of the unit and place a bag over the entire grinding unit to help contain and minimize splatter on the walls of the glove box.
- **10.3.7.8** Turn the grinding unit on low speed and gradually increase the speed to homogenize the sample being careful to minimize any splatter or outside contamination. Homogenize until a uniform consistency is achieved.
- 10.3.7.9 Transfer the homogenized sample from the cup to the pre-labeled sample jar using the appropriate utensil. Carefully clean the threads of the sample jar with a DI water-soaked Kim wipe. Clean the outside of the sample jar with a 10% bleach-soaked Kim wipe. Set the sample jar inside the transfer box and close the transfer box inner door.
- 10.3.7.10 To clean the grinding unit in between samples, remove as much residual tissue on the blade as possible by operating the unit at low or medium speed with DI water in the sample cup. Keep a bag over the grinding unit

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as the primary containment for splashing. If necessary, use the nylon brush to gently scrub the exposed surfaces and to dislodge remaining tissue. Repeat as necessary, until the unit appears clean. Any plastic or ceramic parts must now be given a final rinse with 25% HNO3 then DI water when processing samples for metals analysis. If processing for organic compounds only, rinse with DI water, acetone and then the methylene chloride.

- **10.3.7.11** Repeat steps 10.3.2.3 through 10.3.7.10 until the five samples have been processed and each placed into the transfer box. Ensure the outer Latex or PVC gloves are changed in between each sample.
- 10.3.7.12 Since the amount of tissue obtained from one mouse or shrew may be small, several specimens may be combined to make one sample, as required by project specifications. Utensils do not need to be rinsed between the individual samples that comprise one composite, but utensils must always be cleaned in between each composite sample.
- 10.3.7.13 If several specimens will be composited to make one sample, follow the applicable Sections of 10.3.7.3 through 10.3.7.10, for each of the specimens. The tissue obtained from each specimen may be weighed and recorded individually, then totaled for the composite weight. If only one composite weight is sufficient for the project specifications, weigh the entire composite and record that weight.
- 10.3.7.14 Remove the individual or composite sample jars from the transfer box from the outside of the glove box, and return them to the Sample Management office for storage in the freezers until extraction/digestion. At the same time, obtain the next five samples to be processed and homogenized from the Sample Management office freezers. Movement of samples into and out of freezer storage must be documented in the freezer logbooks and in the LIMS Tracking log.
- 10.3.7.15 Allow the samples to partially thaw and begin again at 10.3.7.3 through 10.3.7.14 until all samples have been processed and homogenized. Clean the outer surfaces of the homogenate sample jars as described in 10.3.7.10, and remove them from the transfer box. If the samples will not be extracted/digested immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until extraction/digestion. Record placement of the samples in the freezer, in the freezer storage logbook, for hold time tracking. Note return of the samples to Sample Management in the LIMS Tracking log.
- **10.3.7.16** Before removing any equipment from the glove box, the following disinfection steps must be taken:
 - Remove the primary containment bag. Take care not to invert the bag. Place this bag into another bag.
 - After the grinding unit, cup and blades have been cleaned with DI water as in 10.3.7.10, rinse the entire unit with the 10% bleach solution. Collect the bleach in a waste bottle.
 - Remove the bags that were twist tie secured to the grinding unit, and place them into another bag. Rinse the entire unit again with the bleach solution.
 - Roll up the bench liner, and place this into a bag.

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- Pour all waste solutions into capped waste bottles. Place these bottles and any other bleach cleaned utensils, into bags, and seal all bags.
- Wipe the inside surfaces of the glove box with Kim wipes soaked in the bleach solution.
- The glove box transfer doors may now be opened to remove the grinding unit and waste. The waste material may be discarded after adding 10% bleach. The utensils and the grinding unit may be re-washed according to the normal cleaning procedures.
- 10.3.7.17 Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. Composite homogenates must be prepared from equal weights of individual homogenates. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior to extraction/digestion, these homogenates must be thawed and rehomogenized by hand mixing prior to being extracted or digested.
- **10.3.7.18** After individual homogenates have been combined to form the final sample composite homogenate, as requested, all utensils and equipment must be washed, in between samples, according to the procedures described previously in Section 10.1.
- 10.3.7.19 If the final sample composite homogenates will not be extracted/digested immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until extraction/digestion. Record placement of the samples in the freezer, in the LIMS, for hold time tracking. Note return of the samples to Sample Management in the LIMS Tracking log.

10.3.8 Reptiles and Amphibians (Frogs and Turtles)

- 10.3.8.1 Wash all utensils, the cutting board, and surfaces as previously described in Section 10.1. Note the allowable materials in Section 4. Obtain samples from the Sample Management office and log them out of the freezer logbooks for hold time tracking purposes. Note removal of samples in the LIMS Tracking log.
- 10.3.8.2 Wearing the proper gloves, place the *turtle* sample on the cleaned cutting board. The turtle should be partially thawed. If the turtle is frozen, it will be difficult to remove the muscle. If the sample is excessively thawed, the internal tissue will become soupy and difficult to remove.
- 10.3.8.3 Take all project required measurements. The distance between the anterior and posterior edge of a turtle carapace (top of shell) should be measured with a ruler and recorded on the processing records. If the entire mass of the turtle, including the shell, needs to be recorded, cover the balance with the proper material and weigh and record this weight on the processing records.
- 10.3.8.4 Since the plastron (bottom of shell) and carapace are extremely dense and difficult to cut through with normal dissecting tools, the muscle tissue of the turtle must be removed by cutting the body of the turtle away from the

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shell. Insert a knife, made of the proper material, into the skin of the turtle, close to the shell on the lower half of the body. Slowly, cut along the entire circumference of the shell. Repeat the procedure on the upper half of the body, on both sides of the shell.

- **10.3.8.5** With dissection scissors, or a ceramic or titanium paring knife of the proper material, remove the skin from the hind limbs, tail, fore limbs and neck.
- 10.3.8.6 Using the appropriate utensils, remove the muscle tissue from the tail, neck, hind limbs, and fore limbs, including the feet, leaving bone and claws behind. Remove any visible muscle tissue within the carapace. Most of this tissue will be found in the upper portion of the carapace around the pectoral area.
- 10.3.8.7 Cover the balance with the proper material and weigh the amount of tissue obtained from the turtle sample. Record the weight along with the information previously recorded on the processing records. The sample may now be stored pending homogenization in the appropriate jar, see Section10.3.8.15. If the sample will be homogenized immediately, proceed to 10.3.8.13.
- 10.3.8.8 If processing frogs, allow the frog to partially thaw, take the project specific measurements, and record them on the processing records. The number of frogs required to make up one sample, and the weight and length of the individual frogs, must be taken and recorded, if specified. In all cases, the skin must be removed from the frog prior to processing and chopped into smaller pieces, due to its thickness. It will then be added to the processor with the whole body of the frog, or it may be discarded depending upon the project specifications.
- 10.3.8.9 To skin the frog, make an incision, using the proper utensils, and cut into an area where there is an excess of skin, most likely around the neck. Slowly, pull the skin off of the frog using dissecting scissors, or a ceramic or titanium paring knife, as needed. Once skin is removed chop it up into tiny pieces using the appropriate knife and set it aside to be processed with the whole frog body.
- 10.3.8.10 Cover the balance with the proper material and weigh the amount of tissue obtained from the frog sample, if the tissue and not the whole body will be processed. Record the weight along with the information previously recorded on the processing records. The sample may now be stored pending homogenization in the appropriate jar, see Section 10.3.8.15. If the sample will be homogenized immediately, proceed to 10.3.8.13.
- 10.3.8.11 Since the amount of tissue obtained from one small turtle or frog may be insignificant, several specimens may be combined to make up one sample. Utensils do not need to be rinsed between the individual samples that comprise one composite, but utensils must always be rinsed in between each composite sample.
- 10.3.8.12 If several specimens will be composited to make up one sample, follow the applicable Sections of 10.3.8.1 through 10.3.8.10, for each of the specimens. The tissue obtained from each specimen may be weighed and recorded individually, then totaled for the composite weight. If only the

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composite weight is sufficient for the project specifications, weight the entire composite and record that weight.

- 10.3.8.13 After the tissue has been removed from all of the specimens, homogenize the muscle tissue, and skin if required, by placing it into the small or large food processor fitted with the appropriate blades (stainless steel for the large processor and titanium for the small processor). See Section 4 for allowable materials. The sample may need to be cut into smaller pieces for processing. Grind the sample until it appears to be fully and consistently homogenous. Continue to grind the sample until there are no chunks present in the homogenate.
- 10.3.8.14 Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. Composite homogenates must be prepared from equal weights of individual homogenates. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior to extraction/digestion, these homogenates must be thawed and rehomogenized by hand mixing prior to being extracted or digested.
- 10.3.8.15 Individual or composite samples may be returned to the Sample Management office for further storage in freezers pending extraction/digestion. All processed samples are stored in the proper containers noted in Section 4. All freezer logbooks must be filled out for hold time tracking purposes. Return of samples to Sample Management must be documented in the LIMS Tracking log.
- **10.3.8.16** All utensils and equipment must be washed in between samples according to the procedures described previously in Section 10.1.

10.3.9 Macro Invertebrates

- 10.3.9.1 Wash all utensils, the cutting board, and surfaces as previously described in Section 10.1. Note the allowable materials in Section 4. Obtain samples from the Sample Management office and log them out of the freezer logbooks for hold time tracking purposes. Note removal of samples in the LIMS Tracking log.
- 10.3.9.2 Cover the balance tray with the appropriate material and record the weight of the invertebrate sample. Since the weight obtained from one invertebrate (benthic worms, insects or biota) may be small, several invertebrates may be combined to make one sample. In many cases, several invertebrates of the same species and sample location are delivered to the laboratory in one sample jar. Each specimen from this jar must be weighed, if requested, and composited to form one homogenized and unique sample. If only one composite weight is sufficient for the project specifications, weigh the entire composite and record that weight. Utensils do not need to be rinsed between the individual samples or specimens that comprise one composite, but utensils must always be rinsed in between each composite sample.

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- **10.3.9.3** Invertebrates such as *eels* must be chopped into smaller pieces before homogenization. This is generally due to the length of the specimen and the thickness of the skin.
 - 10.3.9.3.1 For project specifications requiring eel specimens to be skinned prior to homogenization, first secure eel to cutting board using a stainless steel screw. Using a stainless steel knife, cut the skin behind the operculum (gill cover). Using the knife blade, pliers or other cleaned utensil, pull the skin off towards the tail. If necessary, cut lightly along the inside of the skin, slowly separating the skin from the muscle tissue. Removing the skin may require cutting the skin along the backbone or underbelly. If necessary follow project specifications for weight determinations.
- 10.3.9.4 Place the weighed specimen into the clean small processor with the titanium blade to be homogenized. Process the sample until it appears to be fully and consistently homogenized and there are no large chunks.
- Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. Composite homogenates must be prepared from equal weights of individual homogenates. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior to extraction/digestion, these homogenates must be thawed and rehomogenized by hand mixing prior to being extracted or digested.
- 10.3.9.6 Individual or composite samples may be returned to the Sample Management office for further storage in freezers pending extraction/digestion. All homogenates are stored in the proper containers noted in Section 4. All freezer logbooks must be filled out for hold time tracking purposes. Return of samples to Sample Management must be documented in the LIMS Tracking log.
- **10.3.9.7** All utensils and equipment must be washed in between samples according to the procedures described previously in Section 10.1.

10.3.10 Plants

- 10.3.10.1 Wash all utensils, the cutting board, and surfaces as previously described in Section 10.1. Note the allowable materials in Section 4. Obtain samples from the Sample Management office and log them out of the freezer logbooks for hold time tracking purposes. Note removal of samples in the LIMS Tracking log.
- 10.3.10.2 Wearing the appropriate gloves, plants must be rinsed with DI water to remove soil, silt, small insects, and other debris. Place the plants in a stainless steel or plastic strainer, depending on the determinative sample analysis, and rinse thoroughly with DI water. If analyzing the sample for metals and organic compounds, rinse the plants carefully over a sink, being sure not to touch the sides of the sink with the plant sample.

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- 10.3.10.3 Depending on the size and texture of the plants, some may be homogenized in the small food processor with the titanium blade. Samples such as long grass will have to be chopped into small pieces (approximately 1/2 inch) using titanium or ceramic knives. Leaves can generally be homogenized in the small food processor without pre-cutting.
- **10.3.10.4** Some project specifications may require the plants to be dried prior to homogenization. A plastic salad spinner may be used to remove excess water from samples, if organic compounds do not need to be determined. If both metals and organic compounds need to be determined, air drying for 48 hours, or oven drying overnight at low temperatures (S 50°C), can be done. Freeze drying the plant is an additional option for the removal of water and may be employed per project specifications.
- 10.3.10.5 Cover the balance tray with the appropriate material and record the weight of the plant sample. Since the weight obtained from one plant may be small, several plants may be combined to make one sample. Utensils do not need to be rinsed between the individual samples that comprise one composite, but utensils must always be rinsed in between each composite sample.
- 10.3.10.6 If several plants will be composited to make one sample, follow the applicable Sections of 10.3.10.2 through 10.3.10.5, for each of the specimens. The weight of each specimen may be recorded individually, and then totaled for the composite weight. If only one composite weight is sufficient for the project specifications, weigh the entire composite and record that weight on the processing records.
- 10.3.10.7 After the plant weight for one composite or individual sample has been recorded, place the plant(s) in the clean small processor with the titanium blade to be homogenized, or place them onto the cleaned cutting board to be chopped. Grind or chop the plants until they appear to be fully homogenized.
- 10.3.10.8 Individual homogenates may be processed further to prepare composite homogenates as required by project specifications. Composite homogenates must be prepared from equal weights of individual homogenates. All individual weights that make up one composite must be recorded, if required, or one composite weight may be recorded. If individual or composite homogenates were frozen prior to extraction/digestion, these homogenates must be thawed and rehomogenized by hand mixing prior to being extracted or digested.
- 10.3.10.9 Place the homogenized plants into the appropriate glass jars to be frozen for future extraction/digestion, see Section 4. If the samples will not be extracted/digested immediately, the samples must be returned to the Sample Management office and placed back into the freezer, until extraction/digestion. Record placement of the samples in the freezer, in the freezer storage logbook, for hold time tracking. Return of samples to Sample Management must be documented in the LIMS Tracking log.
- **10.3.10.10** All utensils and equipment must be washed in between samples according to the procedures described previously in Section 10.1.

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10.4 Continuing Calibration

Not applicable.

10.5 Preventive Maintenance

Not applicable to this method.

11. Data Evaluation, Calculations and Reporting

The processing bench sheets and other relevant laboratory notebooks must follow the specifications in the ALPHA ANALYTICAL *Logbook Usage Work Instructions* (WI 108-01), and all record keeping and document control practices. Separate project-specific documents may be used in place of Alpha bench sheets, as necessary.

See the appropriate ALPHA analytical SOPs noted in Section 1, for details on sample analysis, data evaluation, calculations and data reporting.

All results for the organic/inorganic compounds of interests are reportable without qualification if extraction/digestion and analytical holding times are met, preservation (including cooler and freezer temperatures) are met, all QC criteria defined in the table below are met, and matrix interference is not suspected during extraction/digestion and/or analysis of the samples. If any of the below QC parameters are not met, all associated samples must be evaluated for re-extraction and/or reanalysis.

QC Parameter	Acceptance Criteria
Equipment/Processing Blank	< reporting limit
Method Blank	< reporting limit
Laboratory Control Sample	See the applicable ALPHA analytical SOP for acceptance criteria
Matrix Duplicate	See the applicable ALPHA analytical SOP for acceptance criteria
Matrix Spike	See the applicable ALPHA analytical SOP for acceptance criteria
Matrix Spike Duplicate	See the applicable ALPHA analytical SOP for acceptance criteria
Surrogate Recoveries	See the applicable ALPHA analytical SOP for acceptance criteria
Standard Reference Material	See the applicable ALPHA analytical SOP for acceptance criteria

12. Contingencies for Handling Out-of-Control Data or Unacceptable Data

Section 9, Quality Control, defines the preparation and/or analytical corrective actions that must be taken in instances where QC outliers exist.

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Section 11 outlines sample batch QC acceptance criteria. If non-compliant organic or inorganic compound analytical results are to be reported, the Department Manager and/or the Laboratory Director, and the QA Manager must approve the reporting of these results. The laboratory Project Manager shall be notified, and may chose to relay the non-compliance to the client, for approval, or other corrective action, such as re-sampling and re-analysis. The analyst or Department Manager performing the secondary review initiates the project narrative, and the narrative must clearly document the non-compliance and provide a reason for acceptance of these results.

13. Method Performance

13.1 Method Detection Limit Study (MDL) / Limit of Detection Study (LOD) / Limit of Quantitation (LOQ) – Not Applicable

Not Applicable

13.2 Demonstration of Capability Studies

Not Applicable

14. Pollution Prevention and Waste Management

Refer to Alpha's Chemical Hygiene Plan and Hazardous Waste and Sample Disposal SOP for further pollution prevention and waste management information.

Once satisfactory organic or inorganic compound results have been generated, the extracts/digestates are held for 30 days, or longer, if specified by a client contract. Then, organic extracts are discarded into a 55-gallon drum labeled "Vial Waste" and inorganic digestates are poured into a 55-gallon drum marked "Acid/Non-chlorinated" waste.

All solvent or reagent waste generated during processing and/or extraction/digestion must be stored in satellite containers in the preparation laboratories labeled "Organic Solvent", "Acid/Non-chlorinated" or "Bleach".

Once the organic solvent satellite containers are full, they must be emptied into 55-gallon drums marked "Organic Solvent Waste". Cleanup waste from the HPLC fractionators (silica cleanup) or GPC is emptied into the 55-gallon drum marked "HPLC Solvent Waste". Bleach from disinfection is emptied into the 20-gallon drum marked "Bleach", and reagent waste generated during metals analysis is emptied into a 55-gallon drum marked "Acid/Non-chlorinated" waste.

15. Referenced Documents

Chemical Hygiene Plan
SOP/08-05 MDL/LOD/LOQ Generation
SOP/08-12 IDC/DOC Generation
SOP/G-006 Hazardous Waste and Sample Disposal

16. Attachments

None.

Protocol Modification Form: Fish/Decapod QAPP No. 14

Project Name and Number: Passaic RI 09.58.02.31

Material to be Analyzed: Tissue

Measurement Parameter: Polychlorinated biphenyl (PCB) congeners

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Fish/Decapod QAPP Worksheets 12, 15, and 28 state that PCB congeners will be analyzed using USEPA 1668A and reference Attachment T2, SOP No.AP-CM-7, High Resolution Mass Spectrometry, Method 1668A for Solid/Air/Aqueous/Tissue Matrices, Revision 7, 2/14/05.

Reason for Change in Field Procedure or Analysis Variation:

Analytical Perspectives implemented USEPA's revision B to Method 1668A, and is now referencing USEPA 1668B.

Variation from Field or Analytical Procedure:

Analytical Perspectives is conducting USEPA Method 1668B rather than 1668A as consistent with the attached revised SOP (SOP No. AP-CM-7, High Resolution Mass Spectrometry, Method 1668B for Solid/Air/Aqueous/Tissue Matrices, Revision 9, dated August 26, 2010). All Fish/Decapod QAPP tissue data will be reported using 1668B. The only change that will affect the Fish/Decapod QAPP data is the change in the nomenclature for congeners 107, 108, and 109 as summarized in the table below. The acceptance criteria provided in Worksheets 12 and 28 of the Fish QAPP/Decapod will be followed.

USEPA Method	d 1668A	USEPA Method 1668B				
PCB Congeners	Response Time	PCB Congeners	Response Time			
108 /119/86/97/125/87	37:19	109 /119/86/97/125/87	37:19			
107 /124	40:39	108 /124	40:39			
109	40:54	107	40:54			

Special Equipment,	Materials	or Personnel	Required:
None.			

Initiator's Name:

Date: 8/26/10

Project Manager:

Date: 9/10/10

QA Manager:	Jad Kleshler	 Date:	8/26/10
USEPA Authority:		_Date:	

Protocol Modification Form: Fish/Decapod QAPP No. 15

Project Name and Number: Passaic RI 09.58.02.31

Material to be Analyzed: Tissue

Measurement Parameter: Major cations (calcium, magnesium, sodium, and potassium)

Standard Procedure for Field Collection & Laboratory Analysis (cite reference):

Fish/Decapod QAPP Worksheets 12 and 28 indicate that matrix spikes will be performed for all metals analyses, including calcium, magnesium, sodium, and potassium.

Reason for Change in Field Procedure or Analysis Variation:

Matrix spikes for calcium, magnesium, sodium, and potassium will not be performed because the known background level in tissue is higher than the standard spiking level. The standard spiking level cannot be increased because analytical interferences are created when the major cations are present at the concentrations that would be required for the matrix spike (2 to 5 times the background concentration).

Variation from Field or Analytical Procedure:

Special Equipment Materials or Developed Descriped

Columbia Analytical Service, Kelso will not be performing matrix spikes for calcium, magnesium, sodium, and potassium in tissue as stated in Worksheets 12 and 28 of the Fish/Decapod QAPP. However, laboratory control samples (blank spikes) will include these major cations as specified in the Fish/Decapod QAPP.

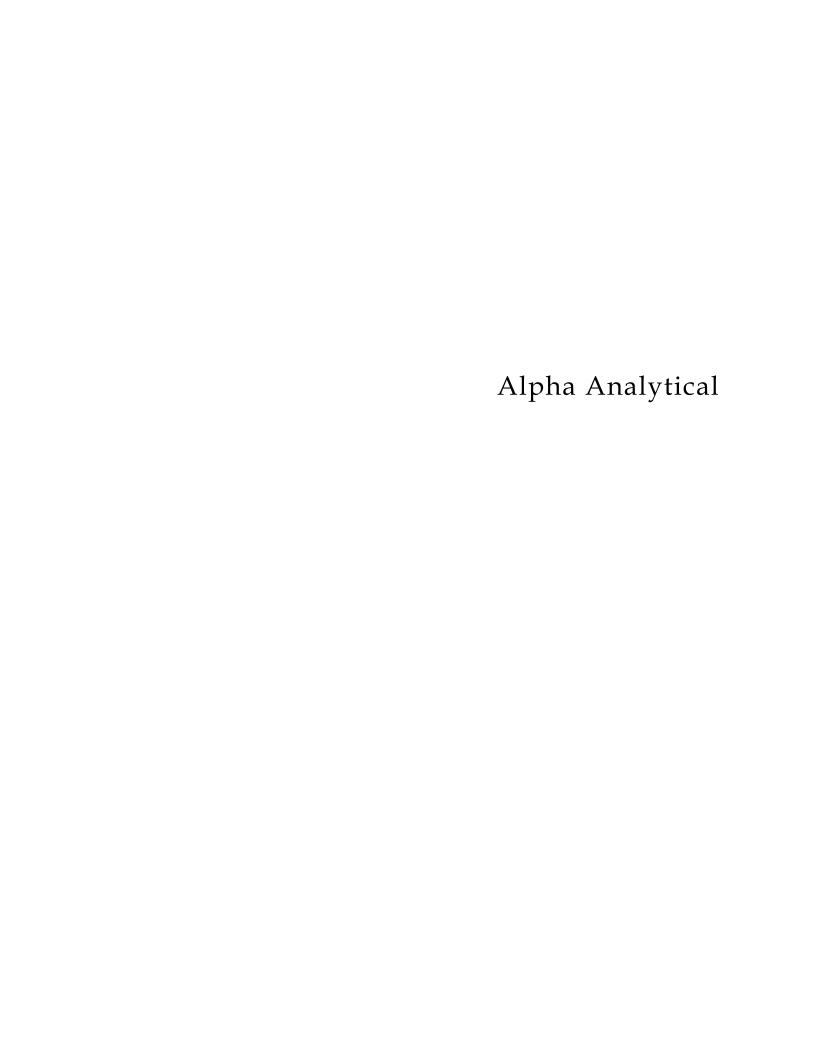
None.	it, materials of Personnel Required:			
Initiator's Name:	DODL.	Date:	8/26/10	
Project Manager:	his Sohn	Date:	9/10/10	
QA Manager:	Jad Kleshler	Date:	8/26/10	
USEPA Authority:		Date:		

Protocol Modification Form: Fish/Decapod QAPP No. 16

Project Name and	Numbe	r: Passaic RI 09.5	8.02.31					
Material to be Ana	Material to be Analyzed: <u>Tissue</u>							
Measurement Par	ameter:	Butyltins						
Standard Procedu Worksheet No. 28 per batch of 20 sar	of the Fis	sh/Decapod QAPF	states that a n	•	reference): le will be performed			
Reason for Chang Due to laboratory of matrix duplicates for	versight,	Columbia Analyt	cal Services, In		o) did not analyze			
Variation from Fig CAS, Kelso did not Matrix duplicates a Fish/Decapod QAF control samples list butyltins (e.g. labor duplicate), but mat	include re not de PP, but wated in the ratory cor	matrix duplicates ascribed in the labore included in We Worksheet No. 2 antrol sample, methor	for tissues unde oratory SOP att orksheet No. 28 8 of the Fish/Do	ached to the I 3 of the QAPP ecapod QAPF	USEPA-approved All other quality were analyzed for			
Special Equipmen	nt, Mater	ials or Personne	I Required:					
None.								
Initiator's Name:		BDL.		Date:	1/19/11			
Project Manager:	Ken	n dohn		Date:	1/27/11			
QA Manager:	Jad	Leshler		Date:	1/28/11			

USEPA Authority: ______Date: _____

APPENDIX C. CHAIN-OF-CUSTODY FORMS



_1 _ of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Tassaic Kirrs Tissue						Alpha Analytical					# LPR-AA-MH-1A	
Project Number:	roject Number: 09.58.02.31					Ellen Collins					pping Date:	
Contact Name:	ontact Name: Jennifer Parker					ipper:					ill Number:	
Sampled By:	Wi	indward E	nvironmental LLC	Fo	m filled out by:	Jennife	er Parker	/ Diane Ja	anak	_		tandard
	1	1 =			T							
						Te	est(s) Reques	ted (check t	test(s) required)			
Sample Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroctors (8082)	Alkylated PAHs (8270C)		Comments / I [Jar tag nur	
8/26/2009	07:12		MH-Comp37	1	Tissue	Х	х	Х	Х			
9/15/2009	09:58		MH-Comp38	1	Tissue	X	Х	Х	Х			
8/20/2009	13:03	LPR4-CSMH-Comp31		1	Tissue	Х	Х	Х	Х			
8/27/2009	07:13	LPR6-CSMH-Comp41		1	Tissue	Χ	X	Х	Х			
8/25/2009	07:26	LPR6-CSMH-Comp42		1	Tissue	Х	Х	Х	Х			
8/27/2009	07:52	LPR6-CSMH-Comp44		1	Tissue	Х	X	Х	Х			
8/25/2009	09:24	LPR7-CSI	ИН-Comp45	11	Tissue	Х	X	Х	Х			
8/25/2009	09:24	LPR7-CS	ИН-Comp46	1	Tissue	Χ	Х	Х	Х			
8/25/2009	09:35	LPR7-CSI	ИН-Comp49	1	Tissue	Х	X	Х	Х			
8/26/2009	08:58	LPR7-CSI	ИН-Comp53	1	Tissue	Х	Х	Х	X			
		otal Num	ber of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wor	k # AA09_(D1LPR			
1) Released by:	//		2) Released by:		3) Released by:			4) Released	by:		NOTES	
gompany: Alpha/ Date/Time/ 3/2 Rec'd by: Company: Alpha Date/Time: 3/2:	Analytical	-10 -10	Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:			Individual specimens v Windward Environmer date and time correspi collected individual sp composite. Specimens together into composi onsite at Alpha Analyti processed and homog composites; therefore, by Alpha Analytical.	ntal. The collection onds to the earliest ecimen within the were grouped tes by Windward ical. Alpha Analytical enized the
		1000				······································		To be	completed by		by Alpha Analytical.	



To be complete	eted by Laboratory upon sample receipt:
Date of receipt: 5atisfactory \$ 3/23/10	
Condition upon receipt:	Time of receipt: 1510
Cooler temperature: N/A	Received by: Name

CHAIN-OF-CUSTODY/TEST REQUEST FORM of 2 Project/Client Name: Passaic RI/FS Tissue To: Alpha Analytical #LPR-AA-MH-1B 09.58.02.31 Project Number: Ellen Collins Attn: Shipping Date: Jennifer Parker Contact Name: Shipper: Airbill Number: Sampled By: Windward Environmental LLC Jennifer Parker / Diane Janak Form filled out by: Turnaround requested: Standard Test(s) Requested (check test(s) required) Percent Moisture (SM2540G Mod) Alkylated PAHs (8270D) SVOCs (8270C) PCB Aroclors (8082) Sample Collection Date # of Comments / Instructions (m/d/y)Time Sample Identification Containers Matrix [Jar tag number(s)] 9/10/2009 13:02 LPR8-CSMH-Comp61 1 Tissue Х Х Х Χ 8/25/2009 09:39 LPR7-CSMH-Comp48 1 Tissue Х Х Х Х 9/9/2009 09:54 LPR8-CSMH-Comp54 1 Tissue Χ Х Х Х 8/25/2009 09:35 LPR7-CSMH-Comp50 1 Tissue Х Х Х Х 9/9/2009 09:54 LPR8-CSMH-Comp55 1 Tissue Х Х Х Х 9/8/2009 08:44 LPR8-CSMH-Comp56 1 Tissue Х Х Х Х 9/9/2009 08:56 LPR8-CSMH-Comp57 1 Х Tissue Х Х Х 9/1/2009 12:33 LPR1-CSMH-Comp01 1 Tissue Х Х Х Х 9/2/2009 15:02 LPR1-CSMH-Comp02 1 Tissue Х Х Х Х 9/2/2009 15:46 LPR1-CSMH-Comp03 1 Tissue Χ Х Х **Total Number of Containers** 10 of 21 Purchase Order / Statement of Work # AA09 01LPR 1) Released by 2) Released by: 3) Released by: 4) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection Company: Alpha Analytical Company: Company: Company: date and time corresponds to the earliest Date/Time: Date/Time: collected individual specimen within the Date/Time:

Rec d by:

Company:

Date/Time:

Ward environmental LLC

Company: Alpha Analytical

Date/Fime: (3/23/10 1510

Rec'd by:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Rec'd by:

Company:

Date/Time:

To be comple	eted by Laboratory upon sample receipt:
사람들이 하는 그리고 말을 내려왔다. 이 사람들은 사람들이 살아갔다.	Laboratory W.O. #: ∠ 1003087
Condition upon receipt: SATIS factory	Time of receipt: 25/0
Cooler temperature: N/A	Received by:

Rec'd by:

Company:

Date/Time:

composite. Specimens were grouped

together into composites by Windward onsite at Alpha Analytical. Alpha

Analytical processed and homogenized

the composites; therefore, samples are

released by Alpha Analytical.

3 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					o:	Alpha	Analytic	al			# LPR-AA-MH-1C		
Project Number:	_0	9.58.02.31		A	ttn:	Ellen Collins				Ship	Shipping Date:		
Contact Name:	_Je	ennifer Pa	rker	Shipper:					***		oill Number:		
Sampled By:		/indward [Environmental LLC	Fo	orm filled out by:	Jennif	er Parker	/ Diane J	anak	—— Turi	naround requested: Standard		
		7											
						-	est(s) Reque:	sted (check	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270D)		Comments / Instructions [Jar tag number(s)]		
9/2/2009	15:46	LPR1-CS	MH-Comp04	1	Tissue	Х	Х	Х	Х				
		<u> </u>											
					<u> </u>								
		_				·							
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						·			-				
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		Total Nun	ber of Containers	1 of 21	Purchase Order	/ Statem	ent of Wor	k # ΔΔΩ9	O1L PR				
1) Released by:		•	2) Released by:		3) Released by:	,		4) Released			NOTES		
Company: Alpha Analytical Company:			Company:		Company:		- _		Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest				
Date/Time: 3/23/10 /5/0 Date/Time:			Date/Time:	Date/Time:			collected individual specimen within the composite. Specimens were grouped						
Rec'd by:			Rec'd by:			Rec'd by:			together into composites by Windward onsite at Alpha Analytical, Alpha				
Company: Alpha Date/Time: 3/	Analytica 23/10	1570	Company: Date/Time:		Company: Date/Time:			Company Date/Time			Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.		
								To be	completed	by Labo	pratory upon sample receipt:		



Date of receipt: $3/23/10$	Laboratory W.O. #: 21003087
Condition upon receipt: Satisfactory	Time of receipt: 1540
Cooler temperature:	Received by:

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Project/Client Name: Alpha Analytical To: # LPR-AA-RB1 Project Number: 09.58.02.31 Ellen Collins Attn: Shipping Date: Contact Name: Jennifer Parker Shipper: Airbill Number: Windward Environmental LLC Sampled By: Ellen Collins/Diane Janak Form filled out by: Turnaround requested: Standard Test(s) Requested (check test(s) required) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection Date # of Comments / Instructions (m/d/y)Time Sample Identification Containers Matrix [Jar tag number(s)] 3/23/2010 16:30 LPR-032310-RB Water Х Х Х **Total Number of Containers** Purchase Order / Statement of Work # AA09_01LPR 1) Released by: 2) Released by: 3) Released by: 4) Released by: NOTES Company: Company: Company: Date/Time: Date/Time: Date/Time: Rec'd by: Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time:

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_VV III	environmental LLC
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To be completed by Laboratory upon sample rece	
Date of receipt:: $3/23/10$	Laboratory W.O. #:
Condition upon receipt: SATTS FACTORY	Time of receipt: 1640
Cooler temperature: \mathcal{N}/ρ	Received by:

CHAIN-OF-CUSTODY/TEST REQUEST FORM Passaic RI/FS Tissue Project/Client Name: Alpha Analytical #LPR-AA-MH-2A To: 09.58.02.31 Project Number: Ellen Collins Attn: Shipping Date: Contact Name: Jennifer Parker Shipper: Airbill Number: Sampled By: Windward Environmental LLC Jennifer Parker Form filled out by: Standard Turnaround requested: Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Comments / Instructions Date (m/d/y) Time Sample Identification Containers Matrix [Jar tag number(s)] 9/8/2009 09:50 LPR8-CSMH-Comp58 1 Tissue Х Х Χ Х 9/1/2009 14:04 1 LPR1-CSMH-Comp06 Tissue Х Х Χ Х 9/2/2009 16:33 1 Х Х LPR1-CSMH-Comp07 Tissue Х Х 9/2/2009 12:49 LPR1-CSMH-Comp11 1 Tissue Х Х Х Х 8/20/2009 13:03 LPR4-CSMH-Comp30 1 Х Х WW Note: Correct Х Tissue Χ 28 9/1/2009 12:49 LPR1-CSMH-Comp13 1 collection date/time for Tissue Х Х Х Х LPR4-CSMH-Comp30 is 9/1/2009 12:09 1 Tissue LPR2-CSMH-Comp14 Х Х Х Х 8/18/2009 at 11:41. 9/1/2009 11:03 LPR2-CSMH-Comp17 1 Tissue Х Х Х Х 31 9/1/2009 10:02 LPR2-CSMH-Comp15 1 Х Х Х Χ Tissue 9/3/2009 12:35 1 LPR2-CSMH-Comp18 Tissue Х Х **Total Number of Containers** 10 of 20 Purchase Order / Statement of Work # AA09 01LPR 1) Released by: 2) Released by: 3) Released by: 4) Released by: 5) Released by: Company: Company: Company: Company:

Date/Time:

Rec'd by:

Company:

Date/Time:

Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date/Time:

Rec'd by:

Company:

Date/Time:

To be completed by Laboratory upon sample receip	y Laboratory upon sample receipt:
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Date/Time:

Rec'd by:

Company:

Date/Time:

Date of receipt: 4/12/10	Laboratory W.O. #: 21003087
Condition upon receipt: 5ATOS factory	Time of receipt:
Cooler temperature: N/A	Received by: 1 Marry Je
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Rec'd by:

Company:

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Project/Client Name: To: Alpha Analytical # LPR-AA-MH-2B 09.58.02.31 Project Number: Ellen Collins Attn: Shipping Date: Contact Name: Jennifer Parker Shipper: Airbill Number: Sampled By: Windward Environmental LLC Form filled out by: Jennifer Parker Standard Turnaround requested: Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270D) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Comments / Instructions Date (m/d/y) Time Sample Identification Containers Matrix [Jar tag number(s)] 9/1/2009 11:32 LPR2-CSMH-Comp19 1 Tissue Х Х Х 9/1/2009 11:32 1 Х Х LPR2-CSMH-Comp20 Tissue Х Х 8/11/2009 10:08 Х LPR3-CSMH-Comp24 1 Х Х Tissue Х 8/21/2009 13:46 LPR5-CSMH-Comp35 1 Tissue Χ Х Х Х 8/12/2009 10:29 LPR3-CSMH-Comp26 1 Х Х Tissue Х Х 8/18/2009 10:35 LPR4-CSMH-Comp32 1 Χ Tissue Χ Х Х 8/18/2009 12:01 1 LPR4-CSMH-Comp33 Tissue Χ Х Χ Х 8/11/2009 Tissue 07:21 LPR3-CSMH-Comp27 1 Х Х Х Х 8/13/2009 11:52 LPR3-CSMH-Comp28 1 Х Х Tissue Х Х 8/21/2009 13:46 LPR5-CSMH-Comp35 1 Х Х Tissue Х Х **Total Number of Containers** 10 of 20 Purchase Order / Statement of Work # AA09_01LPR 1) Released By: 2) Released by: 3) Released by: 4) Released by: 5) Released by: Company: Company: Company: Company: Date/Time: Date/Time: Date/Time: Date/Time: Rec'd by: Rec'd by: Rec'd by: Rec'd by:

Company:

Date/Time:

Ward
environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

l o be comple	eted by Laboratory upon sample receipt:	
Date of receipt: 4/12/10	Laboratory W.O. #: 21003087	
Condition upon receipt: SATISFA CTORY	Time of receipt: / //00	
Cooler temperature:	Received by:	

Company:

Date/Time:

Company:

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Project/Client Name: To: Alpha Analytical # LPR-AA-MH-2Brev 09.58.02.31 Project Number: Attn: Ellen Collins Shipping Date: Contact Name: Jennifer Parker Shipper: Airbill Number: Windward Environmental LLC Sampled By: Form filled out by: Jennifer Parker Turnaround requested: Standard Test(s) Requested (check test(s) required) Alkylated PAHs (8270D) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions 9/1/2009 11:32 LPR2-CSMH-Comp19 Tissue Χ Χ Х Х [Jar tag number(s)] 9/1/2009 11:32 LPR2-CSMH-Comp20 Χ Tissue Χ Χ Χ 8/11/2009 10:08 LPR3-CSMH-Comp24 Χ Tissue Χ Χ Χ 8/18/2009 07:43 LPR5-CSMH-Comp34 1 Χ Tissue Χ X X Alpha ID L1003087-36 Tissue Χ Χ Χ Χ 8/12/2009 10:29 LPR3-CSMH-Comp26 8/18/2009 10:35 LPR4-CSMH-Comp32 Tissue Χ Χ Χ Χ 8/18/2009 12:01 LPR4-CSMH-Comp33 Χ Tissue Χ Χ Χ 8/11/2009 07:21 LPR3-CSMH-Comp27 Χ Χ Tissue Х Χ 8/13/2009 11:52 LPR3-CSMH-Comp28 Χ Tissue Χ Х Χ 8/21/2009 13:46 LPR5-CSMH-Comp35 Χ Χ Tissue Х Χ **Total Number of Containers** 10 of 20 Purchase Order / Statement of Work # AA09 01LPR 2) Released by: 3) Released by: 4) Released by: 5) Released by: Company: Company: Company: Company:

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Company: Date/Time:

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Date of receipt:: 4/12/10	Laboratory W.O. #. <i>上 1003087</i>
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[4 후 1 기 후 기 : 강합학교 학생 기계 원리를 통해 조 리 함께 표표를 받는 학생 학생들은 [4	Received by: Amoust

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue # LPR-AA-RB2 Project/Client Name: To: Alpha Analytical 09.58.02.31 Ellen Collins Project Number: Attn: NA Shipping Date: Contact Name: Jennifer Parker NA Shipper: NA Airbill Number: Windward Environmental LLC Ellen Collins/Diane Janak Sampled By: Form filled out by: Turnaround requested: Standard Test(s) Requested (check test(s) required) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection Date # of (m/d/y)Time Sample Identification Containers Matrix Comments / Instructions 4/12/2010 LPR-041210-RB 0P:01 6 Water Х Χ Χ [Jar tag number(s)] **Total Number of Containers** 6 Purchase Order / Statement of Work # AA09 01LPR 1) Released by: 2) Released by: 3) Released by: 4) Released by: NOTES Company: Company: Company: Date/Time: Date/Time: Date/Time: Rec'd by: Rec'd by: Rec'd by: Company: Сотралу: Company: Company: Date/Time: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

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Date of receipt:: 4//2/10	Laboratory W.O. #: 21003087
Condition upon receipt: Satisfictory	Time of receipt: // 00
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CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Project/Client Name: To: Alpha Analytical #LPR-AA-CT-A 09.58.02.31 Project Number: Attn: Ellen Collins Shipping Date: Contact Name: Jennifer Parker Shipper: Airbill Number: Sampled By: Windward Environmental LLC Form filled out by: Jennifer Parker Turnaround requested: Standard Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Processing and homogenization Alkylated PAHs (8270C) SVOCs (8270C) PCB Arodors (8082) Sample Percent Collection # of Comments / Instructions Date (m/d/y) Time Sample Identification Containers Matrix [Jar tag number(s)] 8/20/2009 13:03 LPR4-CSCT-Comp31 1 Tissue Х Х Х Х Х 9/1/2009 12:33 LPR1-CSCT-Comp01 1 Tissue Х Χ Х Χ Х 9/2/2009 15:02 LPR1-CSCT-Comp02 1 Tissue Х Χ Х Х Х 9/2/2009 15:46 LPR1-CSCT-Comp03 1 Tissue Х Х Х Х Х 9/2/2009 15:46 LPR1-CSCT-Comp04 1 Tissue Х Х Х X Х 9/1/2009 14:04 LPR1-CSCT-Comp06 1 Х Tissue Х Х Х Х 9/2/2009 16:33 LPR1-CSCT-Comp07 1 Tissue Х Χ Х Χ Х 9/2/2009 12:49 LPR1-CSCT-Comp11 1 Tissue Х Х Х Х Х 8/18/2009 11:41 LPR4-CSCT-Comp30 1 Х Tissue Х Х Х Х 9/1/2009 12:49 LPR1-CSCT-Comp13 1 Tissue Х **Total Number of Containers** 10 of 24 Purchase Order / Statement of Work # AA09_01LPR 2) Released by: 3) Released by: 4) Released by: 5) Released by: Company: Company: Company:

Date/Time:

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	1) Released by:
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200	147		~
200	West N	nercer:	Street
Suite	e 401		

Date/Time:

Rec'd by:

Company:

Date/Time:

Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:		
	Laboratory W.O. #:	
Condition upon receipt: SAHS factory	Time of receipt: //00	
Cooler temperature: N/A	Received by: Morre	

Date/Time:

Rec'd by:

Company;

Date/Time:

Company:

Date/Time:

Rec'd by:

Company:

2 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					To: Alpha Analytical						# LPR-AA-CT-B		
Project Number:	_0	9.58.02.3	1		Attn: Ellen Collins					Shij	Shipping Date:		
Contact Name:	<u>. J</u>	ennifer Pa	arker		Shipper:					Airb	pill Number:		
Sampled By:		Vindward	Environmental LLC		Form filled out b	ру:	ennifer Pa	rker		Turi	naround requested: Standard		
	****				-, -:								
						Te	est(s) Reque	sted (check to	est(s) requir				
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	Processing and homogenization	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270D)	Comments / Instructions [Jar tag number(s)]		
9/1/2009	12:09	09 LPR2-CSCT-Comp14 1			Tissue	Х	х	Х	Х	Х			
9/1/2009	11:03	LPR2-C	SCT-Comp17	1	Tissue	Х	Х	Х	Х	X			
9/1/2009	10:02	LPR2-C	SCT-Comp15	1	Tissue	X	Х	Х	Х	Х			
9/3/2009	12:35	LPR2-C	SCT-Comp18	1	Tissue	Х	Х	Х	Х	Х			
9/1/2009	11:32	LPR2-C	SCT-Comp19	1	Tissue	X	Х	Х	Х	Х			
9/1/2009	11:32	LPR2-CSCT-Comp20			Tissue	Х	Х	Х	Х	Х			
8/11/2009	10:08	LPR3-C	SCT-Comp24	1	Tissue	Х	Х	Х	Х	Х			
8/18/2009	07:43	LPR5-C	SCT-Comp34	1	Tissue	X	Х	Х	Х	Х			
8/12/2009	10:29	LPR3-C	SCT-Comp26	1	Tissue	Х	Х	Х	Х	Х			
8/18/2009	10:35	LPR4-CS	SCT-Comp32	1	Tissue	х	х	Х	Х	X			
		Total Nur	mber of Containers	10 of 24	Purchase Ord	er / Statem	ent of Wor	k # AA09_0	1LPR				
1) Released by:	J.		2) Released by:		3) Released by:			4) Released	by:		5) Released by:		
Company:	2161		Company:		Company:			Company:			Company:		
Date/Time/	110		Date/Time:		Date/Time:		·	Date/Time:			Date/Time:		
Rec'd by	Rec'd by:				Rec'd by:			Rec'd by:			Rec'd by:		
Company. Date//ime:	Company: Date/Time: 4/12/10 Company: Date/Time:				Company: Date/Time:			Company: Date/Time:			Company: Date/Time:		
								· · · · ·					

V 1
/Ward
environmental LLC

TO be comple	eted by Laboratory upon Sample receipt.
Date of receipt: 4/12/10	Laboratory W.O. # 21003161
Condition upon receipt: SAtisfactory	Time of receipt: ///00
Cooler temperature: V/A	Received by: 1/18me //
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

3 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				To:	Al	pha Anal	ytical # LPR-AA-CT-C				
Project Number:	0	9.58.02.31	,	Attn:	EII	en Collins	Ship	Shipping Date:			
Contact Name:	J	ennifer Parker		Shipper:						Airbill Number:	
Sampled By:	V	Vindward Environmental LLC		Form filled out by: Jennifer Park			ker		Turr	naround requested: Standard	
						est(s) Reque	sted (check t	est(s) requi			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Processing and homogenization	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270D)	Comments / Instructions [Jar tag number(s)]	
8/18/2009	8/18/2009 12:01 LPR4-CSCT-Comp33 1			Tissue	Х	Х	Х	Х	Х		
8/11/2009	07:21	D7:21 LPR3-CSCT-Comp27		Tissue	Х	Х	Х	Х	Х		
8/13/2009	11:52	LPR3-CSCT-Comp28	1	Tissue	X	Х	Х	Х	Х		
8/21/2009 13:46 LI		LPR5-CSCT-Comp35	1	Tissue	X	Х	Х	Х	Х		
								<u> </u>			

		T. IN 1 50 11				L	<u> </u>				
11.5 1 11//		Total Number of Containers	4 of 24	Purchase Orde	er / Statem	ent of Wo	rk # AA09_0	1LPR	•••		
1) Released by	4	2) Released by:		3) Released by:			4) Released	<u>by:</u>		5) Released by:	
Company:	WH1	Company:		Company:			Company:			Company:	
Date/Time:	1	Date/Time:		Date/Time:			Date/Time:			Date/Time:	
Rec'd by:	10 <i>gf</i>	Rec'd by:		Rec'd by:			Rec'd by:			Rec'd by:	
Company: 199118 Pate/Time: 1912/10		Company: Date/Time:		Company: Date/Time:			Company: Date/Time:			Company: Date/Time:	
		· 									

Ward environmental LLC

 To be completed	i by Laboratory :	upon sample receipt:

Date of receipt:: 4/12/10	Laboratory W.O. #: 2/003/6/
Condition upon receipt: Sp hsfactory	Time of receipt: 1100
Cooler temperature: N/A	Received by: A Mare

_1 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame:	Passaic	RI/FS Tissue	To: Alpha Analytical						# LPR-AA-MT-A		
Project Number:		09.58.02.	31	A	Attn: Ellen Collins					Shipping Date: NA		
Contact Name:		Jennifer I	Parker		hipper:	NA				Airbill Num		
Sampled By:	· ·	Windward	d Environmental LLC	F	Form filled out by:		Jennifer Parker/Dianne Janak				d requested: Standard	
										14.114.104.11	o requested. Otandard	
						T	est(s) Reque	sted (check	test(s) required)			
Sample Collection Date (m/d/y) Time			Sample Identification		Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)		Comments / Instructions	
8/28/2009	8:50	LPR7-	CSMT-Comp52	1	Tissue	X	Х	Х	X		[Jar tag number(s)]	
9/1/2009	14:04	LPR1-0	CSMT-Comp08	1	Tissue	X	x	X	X			
9/2/2009	12:08	LPR1-0	CSMT-Comp10	1	Tissue	Х	Х	X	X		<u> </u>	
9/3/2009	12:00	LPR1-0	CSMT-Comp12	1	Tissue	X	х	X	X			
9/2/2009	12:26	LPR2-0	CSMT-Comp16	1	Tissue	Х	X	Х	X			
9/17/2009	11:27	LPR6-0	CSMT-Comp39	1	Tissue	X	Х	Х	X			
9/1/2009	11:46	LPR2-0	CSMT-Comp22	1	Tissue	X	Х	Х	X			
9/1/2009	11:07	LPR2-0	CSMT-Comp23	1	Tissue	Х	Х	Х	х	- 		
8/27/2009	06:50	LPR6-0	CSMT-Comp40	1	Tissue	Х	Х	Х	x			
8/12/2009	09:24	LPR3-0	SMT-Comp25	1	Tissue	Х	Х	X	x	···		
	7	Total Nu	mber of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wor	k # AA09 (D1LPR	<u>_</u> l		
1) Released by:	11		2) Released by:		3) Released by:			4) Released		NO	OTES	
Company: Date/Time: Rec'd by: Company: Company: Date/Time: Date/Time: Date/Time: Date/Time:				Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:		V d	ndividual specimens were collected by Vindward Environmental. The collection late and time corresponds to the earliest ollected individual specimen within the omposite. Specimens were grouped opether into composites by Windward nsite at Alpha Analytical. Alpha nalytical processed and homogenized he composites; therefore, samples are eleased by Alpha Analytical.		



eted by Laboratory upon sample receipt:
Laboratory W.O. #. 2 1003169
Time of receipt: 1309)
Received by:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Nam	ne: Pa	ssaic RI/FS Tissue	To: Alpha Analytical						# LPR-AA-MT-B		
Project Number:	09	.58.02.31		Attn: Ellen Collins			าร		Ship	ping Date: NA	
Contact Name:	_Jei	nnifer Parker		Shipper:	<u> </u>	IA			`	ill Number: NA	
Sampled By:	Wi	ndward Environmental LLC		Form filled out by:	: <u>J</u>	ennifer Pa	arker/Diar	ne Janak	_	around requested: Standard	
				<u> </u>			::====================================				
						est(s) Reques ਿ ਨੇ	sted (check 	test(s) required)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270D)		Comments / Instructions [Jar tag number(s)]	
8/27/2009	07:17	LPR6-CSMT-Comp43	1	Tissue	Х	Х	Х	Х		[set tag Hamber(3)]	
8/15/2009	7:00	LPR3-CSMT-Comp29	1	Tissue	X	Х	Х	Х			
8/20/2009	12:20	LPR5-CSMT-Comp36	1	Tissue	Х	х	Х	Х			
8/26/2009	11:38	LPR7-CSMT-Comp47	1	Tissue	Х	х	Х	X			
8/27/2009	08:55	LPR7-CSMT-Comp51	1	Tissue	Х	Х	Х	X			
9/9/2009	08:56	LPR8-CSMT-Comp59	1	Tissue	Х	Х	Х	Х			
9/9/2009	08:47	LPR8-CSMT-Comp60	1	Tissue	Х	х	Х	х			
9/10/2009	13:02	LPR8-CSMT-Comp62	1	Tissue	Х	Х	X	Х			
9/1/2009	13:10	LPR1-CSMT-Comp05	1	Tissue	Х	х	Х	Х	Ī		
9/3/2009	11:10	LPR1-CSMT-Comp09	1	Tissue	Х	Х	Х	Х			
	<u> </u>	otal Number of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wor	k # AA09_	01LPR			
1) Released by:	11	2) <u>Released by:</u>		3) Released by:			4) Released	by:		NOTES	
Company: Date/Time: Rec'd by: Company: Company: Company: Company: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:				Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:			Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.	



To be comple	eted by Laboratory upon sample receipt:
Pate of receipt:: 4//4//a	Laboratory W.O. #:
Condition upon receipt: Softsfortory	Time of receipt: 1300
ooler temperature: $\mathcal{N}_{\mathcal{A}}$	Received by: Affine In

3 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue			То	:	Al	pha Analy	tical			# LPR-AA-MT-C		
Project Number:	_0	9.58.02.	31	Attn:			en Collins			Shipping Date: NA		
Contact Name:	<u>_</u>	Jennifer Parker			Shipper:		4			Airbill Number: NA		
Sampled By:		Vindward	d Environmental LLC	Fo	Form filled out by:		nnifer Parl	ker/Diann	e Janak		round requested: Standard	
	=:::					7	Test(s) Reque	sted (check	test(s) require	d)		
Sample Collection Date (m/d/y) 9/2/2009	Time		Sample Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270D)		Comments / Instructions [Jar tag number(s)]	
9/2/2009	14:13	LPR2-0	CSMT-Comp21		Tissue	X	X	X	Х			
	,						-					
						-	-					
		_										
						 		<u> </u>				
					<u> </u>		-					
								-				
	Total Number of Containers		1 of 21	Purchase Ord	ler / Stater	er / Statement of Work # AA09_01LPR						
1) Released by: Company Date/Time:				3) Released by: Company: Date/Time:		4) <u>Released by:</u> Company: Date/Time:				NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earlie collected individual specimen within the		
Rec'd by Company Date/Time:	PHA				Rec'd by: Company: Date/Time:			Rec'd by: Company Date/Time			composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.	
	200 West Merce							To be	complete	d by Laboı	ratory upon sample receipt:	
				rcer Street	Date of	freceipt::	4/14/	A CONTRACT CONTRACT OF			# L 1003164	
Will		Varc	Seattle, WA 9		Conditi	on upon red	eipt:Sat	fationy	1 [[] [] [] [] [] [] [] [] []	ne of receipt:		
	CHVHU	nsinciildi	Fax: (206) 21		20 m (10 m)	temperatur		, 1	Re	ceived by:	1300 Mars /2	

1 of 1

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				То:	Al	pha Anal	ytical		# LPR-AA-HT-A			
Project Number:	_09	.58.02.31	·	Attn:	El	len Collins	3		Shipping Date:			
Contact Name:	Je	nifer Parker		Shipper:	N/	4		· · · ·	Airbill Number			
Sampled By:	_Wi	ndward Environmental LLC	Environmental LLC			nnifer Par	ker/Dian	ne Janak		quested: Standard		
<u> </u>						-		- Carrana				
					To	est(s) Reques	ted (check	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)		Comments / Instructions [Jar tag number(s)]		
9/1/2009	13:10	LPR1-CSHT-Comp05	1	Tissue	Х	Х	Х	Х				
9/1/2009	11:03	LPR2-CSHT-Comp63	1	Tissue	Х	Х	Х	x				
9/3/2009	11:10	LPR1-CSHT-Comp09	1	Tissue	Х	Х	Х	x				
8/11/2009	07:21	LPR3-CSHT-Comp64	1	Tissue	X	х	Х	х				
9/2/2009	14:13	LPR2-CSHT-Comp21	1	Tissue	Х	х	Х	x		<u> </u>		
8/25/2009	09:24	LPRX-CSHT-Comp65	1	Tissue	Х	Х	Х	х				
9/8/2009	2009 07:48 LPR8-CSHT-Comp66		1	Tissue	Х	X	Х	x				
							· · · · · · · · · · · · · · · · · · ·					
	_					<u>. </u>						
		otol Niverban of Cartai										
1) Released by:	· · · · · · · · · · · · · · · · · · ·	otal Number of Containers	7	Purchase Orde	r / Statem	ent of Wor	k # AA09_	01LPR				
2) Released by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time Rec'd by: Company: Date/Time	: ::	Wind date collect computoget onsite Analy the collect	dual specimens were collected by ward Environmental. The collection and time corresponds to the earliest sted individual specimen within the posite. Specimens were grouped her into composites by Windward et at Alpha Analytical. Alpha tical processed and homogenized omposites; therefore, samples are sed by Alpha Analytical.		



TO be comple	ered by ranotatory whom sample receipt:
Date of receipt:: 4/14/10	Laboratory W.O. #: 2 100 4936
Condition upon receipt: 54 tisfactory	Time of receipt: // (300
Cooler temperature: \mathcal{N}/\mathcal{A}	Received by: World fer-

1 0	f _4_		СНА	IN-OF	-CUSTO	DY/	ΓEST F	REQU	EST FO	DRM			
Project/Client Name: Passaic RI/FS Tissue				То:	lpha Anal	ytical		COC reference # LPR-AA-CATF	COC reference # LPR-AA-CATF-A				
Project Number: Task 16.1 (09.58.02.31)							llen Collins			Shipping Date: NA	Shipping Date: NA		
Contact Name: Jennifer Parker				NA			Airbill Number: NA	Airbill Number: NA					
Sampled By:	W	indward E	nvironmental LLC		Form filled out by:	J	ennifer Par	ker/Dian	ne Janak	Turnaround requested: Standard			
					•	Test(s) Reque	ted (check	test(s) required))				
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)				
9/12/2009	9:35	LPR8-W	SFT-Ind009	1	Tissue	Х	Х	Х	Х	Comments / Instructions [lar tag number(s)]			
9/12/2009	11:16	LPR8-W	SFT-Ind013	1	Tissue	Х	Х	Х	Х	[]			
9/15/2009	8:34	LPR5-W	SFT-Ind019	1	Tissue	Х	Х	Х	Х				
9/18/2009	11:57	LPR5-W	SFT-Ind020	1	Tissue	Х	Х	Х	Х				
9/18/2009	14:10	LPR4-W	SFT-Ind023	1	Tiss∪e	X	X	Х	Х				
8/18/2009	8:15	LPR5-IP	FT-Ind001	1	Tissue	Х	X	Х	X				
8/25/2009	7:17	LPR6-IP	FT-Ind003	1	Tissue	Х	Х	Х	Х				
8/26/2009	8:29	LPR6-IP	FT-Ind004	1	Tissue	X	Х	Х	Х				
8/26/2009	10:18	LPR7-IP	FT-Ind005	1	Tissue	X	X	Х	Х				
8/27/2009	9:34	LPR7-IP	FT-Ind006]	Tissue	Χ	X	X	Х				
		Total Num	ber of Containers	10 of 35	Purchase Ord	er / Stat	ement of W	ork # AA	09_01LPR				
1) Released by: Company: Company: Date/Time: Rec'd by: 2) Released by: Company: Date/Time: Rec'd by:			3) Released by: Company: Date/Time: Rec'd by:			and time Specimen Analytica therefore	corresponds to the ns were grouped to l. Alpha Analytical , samples are relea	collected by Windward Environmental. The collection ie earliest collected individual specimen within the co- ogether into composites by Windward onsite at Alph processed and homogenized the individuals and co- ased by Alpha Analytical. Sample names indicate when i) or composite (Comp).	mposit ia nposite				
Company: A.	lino ph		Company:		Company:	y:							



To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 子. ያ. えいっ	Laboratory W.O. #: Lipo 7319
Condition upon receipt: 50435404	Time of receipt: \2:00
Cooler temperature: 12/14	Received by: E Collina

Company:

Date/Time:

Wil	Ward environmental LLC
	environmental ——

Company: Alpa

7/2/10

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

To be completed by Laboratory upon sample recei

Date of receipt: $\frac{1}{2}\sqrt{8/2600}$	Laboratory W.O. #: L1007-519
Condition upon receipt: Section Freedomy	Time of receipt:
Cooler temperature: ぬん	Received by: & Collins

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				-	Го:		Alpha Analy	/tical		COC reference	e: #LPI	R-AA-CATF-C
Project Number: Task 16.1 (09.58.02.31)				Attn: Ellen Collins				Shipping Dat	e: NA			
Contact Name: Jennifer Parker				Shipper: NA				Airbill Numbe	er: NA			
Sampled By:	V	Vindwar	d Environmental LLC		orm filled out by	: <u>J</u>	ennifer Par	ker/Dianr	ne Janak	Turnaround r	equested:	Standard
							Test(s) Reques	ted (check	test(s) required)			
Sample						SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)			
Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	SVO	Percent Moisture (SM254(PCB (808)	Alkyl (827			
8/19/2009	10:51	LPR5	5-ACFT-Ind006	1	Tissue	Х	Х	Х	Х			s / Instructions number(s)]
8/25/2009	8:25		-ACFT-Ind008	1	Tissue	Х	Х	Х	Х		uu	TIUMIDEI (S/J
8/25/2009	8:25	LPR	-ACFT-Ind009	1	Tissue	Х	Х	Х	Х			
8/26/2009	7:55	LPR	-ACFT-Ind010	1	Tissue	Х	Х	Х	Х			
8/27/2009	7:27	LPR	-ACFT-Ind013	1	Tissue	Х	Х	X	X			
8/27/2009	9:48	LPR7	'-ACFT-Ind014	1	Tissue	Х	X	X	Х			
8/29/2009	11:11	LPR	5-ACFT-Ind016	1	Tissue	Х	X	X	Х			
8/29/2009	12:06	LPR7	'-ACFT-Ind017	1	Tissue	Х	X	Х	Х			
9/2/2009	14:13	LPR2	2-ACFT-Ind018	1	Tissue	Х	X	X	Х			
9/8/2009	8:04	LPR8	3-ACFT-Ind019	1	Tissue	Х	Х	Х	Х			
		Total N	lumber of Containers	10of 35	Purchase Orc	ler / Stat	ement of W	ork# AA	09_01LPR			
1) Released by:	كالكنب		2) Released by:		3) Released by:			and time	corresponds to the	e earliest collected ind	lividual specii	ital. The collection date men within the composite.
Company: Company: Date/Time: 7/8/10 1200 Date/Time:				Company:			Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites					
				Date/Time:			therefore, samples are released by Alpha Analytical. Sample names indicate whether the					
Rec'd by:	سشا		Rec'd by:		Rec'd by:		sample is an individual (Ind) or composite (Comp).					
Company: 🙉		_	Company: Date/Time:		Company: Date/Time:							



	to ne combi	eteu by Laborat	ory upon san	ibie receibt:
				and a restrict a representation of a restrict of the first
of receipts and a compact		Laboratory W O #:		

CHAIN-OF-CUSTODY/TEST REQUEST FORM of **Alpha Analytical** COC reference: # LPR-AA-CATF-D Passaic RI/FS Tissue Project/Client Name: To: Task 16.1 (09.58.02.31) Ellen Collins NA Project Number: Attn: Shipping Date: Airbill Number: NA NA Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) (SM2540G Mod) PAHs SVOCs (8270C) PCB Aroclors (8082) Alkylated F (8270C) Percent Sample Collection # of Sample Identification Containers Matrix Date (m/d/y) Time Comments / Instructions Х Х Χ Χ Tissue 9/8/2009 8:44 LPR8-ACFT-Ind020 [lar.tag_number(s)] Х Χ Χ Χ 9/8/2009 LPR8-ACFT-Ind021 Tissue 8:44 Tissue Х Χ Χ Χ 9/10/2009 LPR8-ACFT-Ind022 13:02 Х Х Χ Х Tissue 9/17/2009 11:05 LPR4-ACFT-Ind023 Х Χ Χ Χ LPR5-ACFT-Ind024 Tissue 9/18/2009 11:15 **Total Number of Containers** 5 of 35 Purchase Order / Statement of Work # AA09_01LPR NOTES 1) Released by: 2) Released by: 3) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Company: Alpha Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical, Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Rec'd by: Company: AUNA Company: Company:

Date/Time:



Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt

Date of receipt:: 子、そ. アント	Laboratory W.O. #: Lipox319
Condition upon receipt; こっかったったっと	Time of receipt: いと:~~
Cooler temperature: り仏	Received by: E Collins

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Project/Client Name: Passaic RI/FS Tissue Alpha Analytical To: COC reference # LPR-AA-CATC-A Task 16.1 (09.58.02.31) Project Number: Ellen Collins Attn: NA Shipping Date: Jennifer Parker Contact Name: Shipper: NA NA Airbill Number: Windward Environmental LLC Sampled By: Jennifer Parker/Dianne Janak Form filled out by: Turnaround requested: Standard Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/v) Time Sample Identification Containers Matrix Comments / Instructions 9/12/2009 9:35 LPR8-WSCT-Ind009 Tissue Χ Χ Χ Χ [lar tag number(s)] 9/12/2009 11:16 LPR8-WSCT-Ind013 Tissue Х Χ Χ Х 9/15/2009 8:34 LPR5-WSCT-Ind019 Tissue Χ Χ Χ Х 9/18/2009 LPR5-WSCT-Ind020 Χ 11:57 Tissue Χ Χ Х Χ Χ 9/18/2009 14:10 LPR4-WSCT-Ind023 Tissue Χ Χ 8/18/2009 LPR5-IPCT-Ind001 1 Χ 8:15 Tissue Χ Χ Χ 8/25/2009 7:17 LPR6-IPCT-Ind003 Χ Χ Tissue Χ Χ 8/26/2009 Χ 8:29 LPR6-IPCT-Ind004 Tissue Х Χ Χ Χ 8/26/2009 10:18 LPR7-IPCT-Ind005 Tissue Χ Χ Х 8/27/2009 9:34 LPR7-IPCT-Ind006 Χ Tissue Purchase Order / Statement of Work # AA09_01LPR **Total Number of Containers** 10 of 35 1) Released by: 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Company: Specimens were grouped together into composites by Windward onsite at Alpha Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Rec'd by:

Company:

Date/Time:



Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

to be comp	pieted by Laboratory upon sample receipt:
Date of receipt: A. 8. 2010	Laboratory W.O. #: Llm752
Condition upon receipt: Som shickory	Time of receipt: ハマハロ
Cooler temperature: NA	Received by: & Collins

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	То:	Alpha Analytical	COC reference: # LPR- AA -CATC-B
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Ellen Collins	Shipping Date: NA
Contact Name:	Jennifer Parker	Shipper:	NA	Airbill Number: NA
Sampled By:	Windward Environmental LLC	— Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround requested: Standard

						Te		ted (check t	est(s) require	<u>d)</u>	
Sample Collection Date (m/d/y)	Time	Sam	ple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)		
9/9/2009	9:15	LPR8-IPC	T-Ind008	1	Tissue	Х	Х	Х	Х		Comments / Instructions [lar.tag.number(s)]
9/9/2009	9:15	LPR8-IPC	T-Ind009	1	Tissue	Х	Х	X	Х		
9/10/2009	13:02	LPR8-IPC	T-Ind010	1	Tissue	Х	Х	Χ	X		
9/10/2009	13:02	LPR8-IPC	CT-Ind011	1	Tissue	X	Х	Х	X		
9/10/2009	13:02	LPR8-IPC	CT-Ind012	1	Tissue	X	X	Х	Х		
9/10/2009	13:02	LPR8-IPC	CT-Ind013	1	Tiss∪e	Х	X	X	X		
8/11/2009	11:08	LPR3-AC	CCT-Ind001	1	Tissue	X	Х	Х	X		
8/11/2009	11:30	LPR3-AC	CCT-Ind002	1	Tissue	Х	X	X	Х		
8/13/2009	10:26	LPR3-AC	CCT-Ind003	1	Tissue	X	X	Х	X		
8/14/2009	9:04	LPR3-AC	CCT-Ind005	1	Tissue	X	X	Х	X	<u> </u>	
	•	Total Num	ber of Containers	10 of 35	Purchase Order / Statement of Work # AA09_01LPR						
1) Released by: Company: Company: Date/Time: Rec'd by: Company: Company: Company: Company: Company: Company: Date/Time: Date/Time: Parallel State Company: Date/Time: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time Specimen Analytical therefore,	orresponds to s were grouped . Alpha Analytic	the earliest co d together into al processed a leased by Alph	Windward Environmental. The collection date llected individual specimen within the composite. composites by Windward onsite at Alpha nd homogenized the individuals and composites; a Analytical. Sample names indicate whether the ite (Comp).



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CHAIN-OF-CUSTODY/TEST REQUEST FORM of Alpha Analytical COC reference: # LPR-AA-CATC-C Passaic RI/FS Tissue Project/Client Name: To: Task 16.1 (09.58.02.31) Ellen Collins NA Project Number: Attn: Shipping Date: NA NA Jennifer Parker Shipper: Airbill Number: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) **PAHs** SVOCs (8270C) PCB Aroclors (8082) Alkylated F (8270C) Sample # of Collection Sample Identification Containers Matrix Date (m/d/y) Time Comments / Instructions Х Χ Χ Χ 10:51 LPR5-ACCT-Ind006 Tissue 8/19/2009 [lar tag number(s)] Χ Χ Х Χ 8/25/2009 Tissue 8:25 LPR6-ACCT-Ind008 Х Tissue Χ Χ Χ LPR6-ACCT-Ind009 8/25/2009 8:25 Х Χ Χ Χ Tissue 8/26/2009 7:55 LPR6-ACCT-Ind010 Х Χ Χ Х 8/27/2009 Tissue 7:27 LPR6-ACCT-Ind013 Х Χ Χ Х Tissue 8/27/2009 9:48 LPR7-ACCT-Ind014 Χ Χ Χ Χ 8/29/2009 Tissue LPR6-ACCT-Ind016 11:11 Х Χ Χ Χ 8/29/2009 **Tissue** 12:06 LPR7-ACCT-Ind017 Χ Tissue Χ Х Х 9/2/2009 LPR2-ACCT-Ind018 14:13 Tissue Χ Х Χ Х 9/8/2009 LPR8-ACCT-Ind019 8:04 **Total Number of Containers** 10of 35 Purchase Order / Statement of Work # AA09_01LPR 1) Released by: 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical, Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Rec'd by:

> Company: Date/Time:

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200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

rei:	(200)	3/0-1304
Fax:	(206)	217-9343

Company:

Date/Time:

Date of receipt:: ~ 子 . そ. こっこっ	Laboratory W.O. #: L/OO}7320
Condition upon receipt: Somefreny	Time of receipt: \22. \0

Received by:

To be completed by Laboratory upon sample receipt:

F Collins

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Alpha Analytical COC reference: # LPR-AA-CATC-D Project/Client Name: To: Task 16.1 (09.58.02.31) Ellen Collins Project Number: Attn: Shipping Date: NA Jennifer Parker Shipper: NA Airbill Number: NA Contact Name: Windward Environmental LLC Jennifer Parker/Dianne Janak Turnaround requested: Standard Sampled By: Form filled out by: Test(s) Requested (check test(s) required) Alkylated PAHs (8270C) (SM2540G Mod) SVOCs (8270C) PCB Aroclors (8082) Moisture Sample Collection # of Sample Identification Date (m/d/y) Time Containers Matrix Comments / Instructions Χ Χ Χ Χ 9/8/2009 8:44 LPR8-ACCT-Ind020 Tissue [lar tag number(s)] Χ Χ Χ Х 9/8/2009 LPR8-ACCT-Ind021 Tissue 8:44 Tissue Χ Χ Х Х 9/10/2009 LPR8-ACCT-Ind022 13:02 Х Х Χ Χ Tissue 9/17/2009 11:05 LPR4-ACCT-Ind023 Χ Х Χ Х 9/18/2009 LPR5-ACCT-Ind024 Tissue 11:15 **Total Number of Containers** 5 of 35 Purchase Order / Statement of Work # AA09 01LPR 1) Released by: 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental, The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical, Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Rec'd by: Company: Alpha Company: Company:

Date/Time:



Date/Time: 7/8/10

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date/Time:

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Date of receipt: ユ. F. えいゃ	Laboratory W.O. #: L1007320
Condition upon receipt: satisficting	Time of receipt: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Cooler temperature: N\A	Received by: E Cyllins

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CHAIN-OF-CUSTODY/TEST REQUEST FORM Project/Client Name: Passaic RI/FS Tissue Alpha Analytical # LPR-AA-PI-A To: COC reference 09.58.02.31 Project Number: Ellen Collins NA Attn: Shipping Date: Jennifer Parker NA NA Contact Name: Shipper: Airbill Number: Windward Environmental LLC Sampled By: Form filled out by: Jennifer Parker/Dianne Janak Turnaround requested: Standard Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions LPR6-ELFT-Ind001 8/25/2009 9:54 **Tissue** Χ Χ Χ Х [lar tag number(s)] Χ Χ Χ 9/19/2009 LPR5-MSFT-Comp01 **Tissue** Χ 9:35 Χ 9/8/2009 **Tissue** Χ Χ Χ 10:09 LPR8-MSFT-Ind002 9/18/2009 Χ Х Χ Χ LPR5-MSFT-Ind009 Tissue 10:35 9/18/2009 Χ Χ Χ Х LPR4-MDFT-Comp01 Tissue 13:50 Χ Χ Х Χ 9/18/2009 10:35 LPR5-MDFT-Comp02 **Tissue** 9/10/2009 LPR8-MDFT-Comp03 Χ Х Χ Х 8:40 **Tissue** 8/25/2009 9:54 LPR6-ELCT-Ind001 Χ Χ Χ Χ **Tissue** 9:35 LPR5-MSCT-Comp01 Tissue Χ Χ Χ Х 9/19/2009 Χ 9/8/2009 10:09 LPR8-MSCT-Ind002 Tissue Χ Χ Χ **Total Number of Containers** 10 Purchase Order / Statement of Work # AA09 01LPR 1) Released 15 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Company: Specimens were grouped together into composites by Windward onsite at Alpha Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by:

Company:

Date/Time:

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Date/Time: 7

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

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Condition upon receipt: 5475	Actory Time of receip	t /5:30
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ondition upon receipt: S	Atisfactury	, Т	ime of receipt:	157:30	
ooler temperature:	NA	Partition (Sec.	Received by: //	lam/A	

CHAIN-OF-CUSTODY/TEST REQUEST FORM of # LPR-AA-RB3 Alpha Analytical Passaic RI/FS Tissue COC reference Project/Client Name: To: Ellen Collins 09.58.02.31 Project Number: Attn: Shipping Date: Jennifer Parker Shipper: Airbill Number: Contact Name: Jennifer Parker/Ellen Collins Windward Environmental LLC Form filled out by: Turnaround requested: Standard Sampled By: Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Sample Identification Matrix Date (m/d/y) Time Containers Comments / Instructions Χ Χ Χ Χ LPR-060810-RB Water 6/8/2010 13:30 [lar.tag_number(s)] 6 Purchase Order / Statement of Work # AA09 01LPR **Total Number of Containers** 1) Released by: 2) Released by: 3) Released by: NOTES Company: Company: Date/Time: Date/Time: Rec'd by: Rec'd by: Company: Company: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Ward environmental LLC

Date of receipt:: $6/8/$	/o	Laboratory W.O. #: ノ/	100 7321
Condition upon receipt: 5/1/7	stactury	Time of receipt: /	435
Cooler temperature: ,//,	/a	Received by	<i>4</i> —
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1 of 2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client N	ect/Client Name: Passaic RI/FS Tissue				To: Alpha Analytica			ytical		COC reference # LPR-AA-WB-A
Project Number	ct Number: 09.58.02.31 Attn.				Attn:		len Collins			Shipping Date: NA
Contact Name:		ennifer Pa	rker		Shipper:	N/	Α			Airbill Number: NA
Sampled By:		Vindward I	Environmental LLC		Form filled out by:		nnifer Par	ker/Dianr	ne Janak	Turnaround requested: Standard
	7	·								The same requestion. Other reality
	ĺ					T-		sted (check	test(s) required)	
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)	Comments / Instructions [Jar tag number(s)]
8/11/2009	9:25	LPR3-CC	WB-Ind002	1	Tissue	Х	Х	Х	Х	
8/15/2009		LPR3-CC	WB-Ind005	1	Tissue	Х	Х	Х	Х	
8/19/2009	 	LPR5-CC	LPR5-CCWB-Ind011		Tissue	Х	Х	Х	Х	
8/25/2009	 	LPR6-CC	LPR6-CCWB-Ind021		Tissue	Х	Х	Х	Х	
8/25/2009	8:43	LPR6-CC	LPR6-CCWB-Ind028		Tissue	Х	Х	Х	Х	
8/25/2009	11:33	LPR7-CC	WB-Ind042	1	Tissue	Х	Х	Х	Х	
8/27/2009		LPR7-CC	WB-Ind069	1	Tissue	Х	Х	Х	Х	
9/12/2009	7:58	LPR8-CC	WB-Ind139	1	Tissue	Х	Х	Х	Х	
9/12/2009	10:57	LPR8-CC	WB-Ind147	1	Tissue	Х	Х	Х	Х	
9/18/2009	10:35	LPR5-CCWB-Ind160		1	Tissue	Х	Х	Х	Х	
Total Number of Containers 10 o			10 of 18	Purchase Orde	r / Statem	ent of Wor	k # AA09_	01LPR		
1) Released by: Collino Company: Alpha Company: Date/Time: Clicko K30 Rec'd by: Rec'd by:			3) Released by: Company: Date/Time: Rec'd by:			and time of Speciment Analytical, therefore,	corresponds to the swere grouped tog Alpha Analytical p samples are release	ollected by Windward Environmental. The collection date earliest collected individual specimen within the composite. gether into composites by Windward onsite at Alpha rocessed and homogenized the individuals and composites; ed by Alpha Analytical. Sample names indicate whether the or composite (Comp).		

Company:

Date/Time:



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

To be completed by Laboratory upon sample receip			
rate of receipt:: 6.16.2010	Laboratory W.O. #: L1007744		
ondition upon receipt: عمية يجمد عن مع	Time of receipt: 1530		
ooler temperature: \mathcal{N}/\mathcal{A}	Received by: E Colliss		

2 of 2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project Number: 09.58.02.31 Contact Name: Jennifer Parker		<u> </u>	To: Attn: Shipper:		Alpha Analytical Ellen Collins NA			COC	COC reference: # LPR-AA-WB-B Shipping Date: NA			
								Ship				
								Airb	oill Number:	NA		
Sampled By:	W	indward E	nvironmental LLC		Form filled out by	: Je	nnifer Par	ker/Dianr	ne Janak	Turr	naround reque	
				T								
						T(est(s) Reques	sted (check	test(s) required)		
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)		1	nments / Instructions Jar tag number(s)]
9/18/2009	13:50	LPR4-CC	WB-Ind175	1	Tissue	Х	х	Х	X			
9/19/2009	12:10	LPR4-CC	WB-Ind186	1	Tissue	X	Х	Х	х	•		······································
8/12/2009	9:27	LPR3-AN	WB-Ind001	1	Tissue	Х	Х	Х	X			
8/28/2009	8:05	LPR6-AN	WB-Ind004	1	Tissue	Х	Х	Х	Х			
9/16/2009	10:08	LPR4-AN	WB-Ind007	1	Tissue	Х	Х	Х	Х			
8/28/2009	7:24	LPR6-ANWB-Ind003		_1	Tissue	Х	Х	Х	х			
8/29/2009	11:01	LPR6-ANWB-Ind005		1	Tissue	Х	Х	Х	Х			
8/29/2009	11:44	LPR7-ANWB-Ind006		1	Tissue	Х	Х	Х	Х			
		Total Num	ber of Containers	8 of 18	Purchase Ord	er / State	ment of W	ork# AA	09_01LPR			
1) Released by:	مك		2) Released by:		3) Released by:			NOTES Individual	specimens were o	collected by	Windward Envir	onmental. The collection date
Company: Alpha Company: Date/Time: b/16/10 1530 Date/Time:			Company:			Specimens	orresponds to the were grouped to	e earliest co ogether into	llected individual composites by '	ol specimen within the composite. Windward onsite at Alpha		
			Date/Time:		Analytical. Alpha Analytica		processed and homogenized the individuals and composites; sed by Alpha Analytical. Sample names indicate whether the					
Rec'd by: Coll Company: A\ Date/Time: \			Rec'd by:		Rec'd by:			sample is an individual (Ind) or composite (Comp).				
Company: A\ Date/Time: \\	pha 16/10 15	30	Company: Date/Time:		Company: Date/Time:							



To be completed by Laboratory upon sample receipt				
Date of receipt:: 6 . 16 . 2010	Laboratory W.O. #: LIOD7344			
Condition upon receipt: satisfactory	Time of receipt: \\S3 \circ\			
Cooler temperature: P/A	Received by: Collins			

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Project/Client Name: Alpha Analytical To: COC reference # LPR-AA-RB5 09.58.02.31 Project Number: Ellen Collins Attn: NA Shipping Date: Contact Name: Jennifer Parker Shipper: NA Airbill Number: NA Windward Environmental LLC Sampled By: Form filled out by: Jennifer Parker/Ellen Collins Turnaround requested: Standard Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions 6/29/2010 LPR-062910-RB 10:40 Water Х Χ [lar tag number(s)] **Total Number of Containers** Purchase Order / Statement of Work # AA09 01LPR 1) Released by: 2) Released by: 3) Released by: NOTES Сотрапу: Company: Date/Time: Date/Time: Rec'd by: Rec'd by: Rec'd by: Company: Company: Date/Time: 6/29/10 14:30 Date/Time: Date/Time:

Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

	To be completed by Laboratory u	pon sample receipt:
Date of receipt:: しってっ、こっへ	Laboratory W.O. #: 飞心	e4344
Condition upon receipt: ったった。	стод Time of receipt: 14:30	s
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Company: Alpha

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200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

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e of receipt:: しょい。てんり	Laboratory W.O. #: 1 100>54C

Pate of receipt:: 6-16-7010	Laboratory W.O. #: しょっつうつりん
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ooler temperature: $8/4$	Received by: S Column



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

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Date of receipt:: しいしってい	Laboratory W.O. #: L1007-341
ondition upon receipt: Satisfac	Time of receipt: 15:15
ooler temperature: \mathcal{A}/\mathcal{C}	Received by: & Columb

To be completed by Laboratory upon comple receipts

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Project/Client Name: Passaic RI/FS Tissue Alpha Analytical To: # LPR-AA-RB4 COC reference Project Number: 09.58.02.31 Ellen Collins Attn: Shipping Date: NA Contact Name: Jennifer Parker NA Shipper: NA Airbill Number: Windward Environmental LLC Sampled By: Form filled out by: Jennifer Parker/Ellen Collins Turnaround requested: Standard Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions 6/15/2010 14:15 LPR-061510-RB 6 Water Χ Χ Χ Χ [lar tag number(s)] **Total Number of Containers** Purchase Order / Statement of Work # AA09_01LPR 1) Released by: 2) Released by: 3) Released by: NOTES Company: Company: Date/Time: Date/Time: Date/Time: Rec'd by: Rec'd by: Company ALDHS Company: Company:

Date/Time:

Ward environmental LLC

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date/Time:

	To be completed by Laboratory	y upon sample receipt:
Date of receipt:: 6/15//	つ Laboratory W.O. #: ∠	1007346
Condition upon receipt: SA to SA	ر المرور Time of receipt:	h450
Cooler temperature: ルノム	Received by:	m/

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Project/Client Name: Passaic RI/FS Tissue To: Alpha Analytical # LPR-AA-PERWB-A COC reference Project Number: Task 16.1 (09.58.02.31) Attn: Ellen Collins Shipping Date: NA Contact Name: Jennifer Parker Shipper: NA Airbill Number: NA Windward Environmental LLC Sampled By: Form filled out by: Jennifer Parker/Dianne Janak Turnaround requested: Standard Test(s) Requested (check test(s) required) Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/v) Time Sample Identification Containers Matrix 9/2/2009 15:46 LPR1-MACT-Ind145 Comments / Instructions Х Tissue Х Χ Х [lar tag number(s)] 8/11/2009 7:21 LPR3-MAWB-Comp06 Χ Tissue Χ Х Χ 8/13/2009 11:52 LPR3-MAWB-Comp09 Tissue Χ Χ Χ Х 8/13/2009 11:52 LPR3-MAWB-Comp10 Χ Tissue Χ Х Χ 8/13/2009 11:52 LPR3-MAWB-Comp11 Χ Tissue Χ Χ Χ 8/13/2009 11:52 LPR3-MAWB-Comp12 Tissue Χ Χ Χ Χ 8/13/2009 11:52 LPR3-MAWB-Comp30 Χ Χ Tissue Х Χ 8/25/2009 11:09 LPR7-MAWB-Ind123 Х Tissue Χ Χ Χ 8/26/2009 10:37 LPR7-MAWB-Comp25 Х Tissue Χ Х Х 8/27/2009 6:56 LPR6-MAWB-Ind128 Х Tissue Χ Χ Х **Total Number of Containers** Purchase Order / Statement of Work # AA09_01LPR 10 of 20 1) Released by: 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Company: Specimens were grouped together into composites by Windward onsite at Alpha Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by:

Company:

Date/Time:



Company: Altha

Date/Time: +/13/10

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Company:

Date/Time:

To be comple	eted by Laboratory upon sample receipt:
	Laboratory W.O. #: 1199354
Condition upon receipt:	Time of receipt: 14:00
Cooler temperature: いん	Received by: Ecollins

Project/Client Name:	Passaic RI/FS Tissue	То:	Alpha Analytical	COC reference: # LPR-AA-PERWB-B
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Ellen Collins	Shipping Date: NA
Contact Name:	Jennifer Parker	Shipper:	NA	Airbill Number: NA
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround requested: Standard
	-			

						Te	st(s) Reques	ted (check	d)	
Sample Collection Date (m/d/y)	Tíme	San	nple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)	
9/1/2009	12:59	LPR1-M	AWB-Ind138	1	Tissue	Х	Х	X	Х	Comments / Instructions [Jar tag.number(s)]
9/4/2009	11:25	LPR2-M	AWB-Ind158	1	Tissue	Χ	Х	Х	X	. 5
9/7/2009	13:15	LPR8-M	AWB-Comp32	1	Tissue	Х	Х	Х	X	
9/12/2009	9:35	LPR8-M	AWB-Comp28	1	Tissue	Х	Х	Х	X	
9/12/2009	9:35	LPR8-M	AWB-Comp29	1	Tissue	X	X	X	X	
9/15/2009	9:23	LPR4-M	AWB-Comp14	1	Tissue	Х	Х	Х	Х	
9/17/2009	9:52	LPR5-M.	AWB-Comp19	1	Tissue	Х	X	Х	` X	
9/17/2009	10:04	LPR5-M.	AWB-Comp18	1	Tissue	X	X	Х	Х	
9/18/2009	11:57	LPR5-M	AWB-Comp23	1	Tissue	X	X	X	Х	
9/18/2009	13:19	LPR4-M.	AWB-Comp15	1	Tissue	X	X	Χ	X	
	7	otal Num	ber of Containers	10 of 20	Purchase Orc	ler / State	ment of W	ork # AA	09_01LPR	
1) Released by: Company: Company: Pate/Time: Plys/10 1400 Rec'd by: Company:				3) Released by: Company: Date/Time: Rec'd by: Company:			and time Specimen Analytical therefore,	corresponds to s were grouped . Alpha Analytic samples are rel	e collected by Windward Environmental. The collection date the earliest collected individual specimen within the composite. I together into composites by Windward onsite at Alpha al processed and homogenized the individuals and composites; leased by Alpha Analytical. Sample names indicate whether the nd) or composite (Comp).	
II Date/Time:		400	Date/Time:		Date/Time:					



10 20 00111511	etea by Laboratory apon bample receipti
Date of receipt: ユーバル	Laboratory W.O. #: L10097354
Condition upon receipt: Sectisfactory	Time of receipt: 147:00
Cooler temperature: りん	Received by: Eclino

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue Project/Client Name: Alpha Analytical To: # LPR-AA-RB6 COC reference 09.58.02.31 (Task 16.1) Project Number: Ellen Collins Attn: NA Shipping Date: Jennifer Parker Contact Name: NA Shipper: Airbill Number: NA Windward Environmental LLC Jennifer Parker /Ellen Collins Sampled By: Turnaround requested: Standard Form filled out by: Test(s) Requested (check test(s) required) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions 07/13/10 8:15 LPR-071310-RB Х 6 Water Χ Χ [lar tag number(s)] **Total Number of Containers** 6 Purchase Order / Statement of Work # AA09_01LPR 1) Released by: 2) Released by: NOTES 3) Released by: Company: Company: Date/Time: Date/Time: Rec'd by: Rec'd by: Rec'd by:

Company:

Date/Time:

	Ward
VV III	environmental LLC
	,

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

		Laboratory apor	adinbic icccibe
Date of receipt: キルコ・こい	. Laborati	ory W.O. #: _\ _o	<u> পর্ব্</u> যর
Condition upon receipt: ريجن الم	ztera Time of	receipt: 9:00	
Cooler temperature: $ u)$	Receive	d by: E Collin	

To be completed by Laboratory upon sample receipts

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Project/Client Name: Passaic RI/FS TISSUE					To:	Al	<u>pna Anai</u>	YTICAI COC reference # LPR-AA-P					ZK-AA-PEF	≺⊦-A	
Project Number: Task 16.1 (09.58.02.31)					Attn: Ellen Collins				Sh	Shipping Date: NA					
Contact Name:	Jer	nnifer Par	ker		Shipper:	per: NA					Airbill Number: NA				
Sampled By: Windward Environmental LLC					Form filled out by	r: <u>Je</u>	Jennifer Parker/Dianne Jan			Tu	Turnaround requested: Standard				
		1		T		,									
					ŀ	T	est(s) Reques	ted (check	test(s) required)						
Sample Collection Date (m/d/y)	ime	San	nple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)						
8/11/2009 9	:56	LPR3-M	AFT-Comp02		Tissue	Х	Х	Х	X		1		ts / Instruction n number(s)]	is	
8/11/2009 10					Tissue	Х	Х	Х	Х			-11111111	,		
8/12/2009 9	:24	LPR3-M	AFT-Comp04		Tissue	X	X	Х	Х						
8/13/2009 10	0:00	00 LPR3-MAFT-Comp05			Tissue	X	Х	Х	Х						
8/13/2009 11	1:52				Tissue	Х	Х	Х	Х						
8/13/2009 11	1:52	LPR3-M	AFT-Comp08		Tissue	Х	Х	Х	Х						
8/14/2009 8	:44	LPR3-M	AFT-Comp13		Tissue	Х	X	X	Х						
8/25/2009 7	:30	LPR6-M	AFT-Comp24		Tissue	Х	X	Х	Х						
8/25/2009 9	:54	LPR6-M	AFT-Ind122		Tissue	Х	X	X	Х						
9/1/2009 13	3:10	LPR1-M	AFT-Comp01		Tissue	Х	X	Х	Х						
	T	otal Num	ber of Containers	10 of 19	Purchase Ord	der / State	ment of W	09_01LPR							
Rec'd by:		2) Released by: Company: Date/Time: Rec'd by:			3) Released by: Company: Date/Time: Rec'd by:			and time Specimen Analytical therefore	corresponds to the is were grouped to . Alpha Analytical p samples are releas	ollected by Windward Environmental. The collection date earliest collected individual specimen within the composite gether into composites by Windward onsite at Alpha processed and homogenized the individuals and composites sed by Alpha Analytical. Sample names indicate whether the or composite (Comp).			composite. pha composites;		
Company: Alpha Company: Date/Time: This is the				Company: Date/Time:											



200 West Mercer Street

Juice TOIL
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

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ondition upon receipt: Sock stuckers	Time of receipt: リリンロロ
ooler temperature:	Received by S Cours

To be completed by Laboratory upon sample receipt:

Project/Client Name: Passaic RI/FS Tissue					To: Alpha Analyt					COC reference	COC reference: # LPR-AA-PERF-B				
Project Number:	_ <u>T</u>	ask 16.1 (09.58.02.31)		Attn:	E	llen Collins	;		Shipping Dat	Shipping Date: NA				
Contact Name: Jennifer Parker					Shipper:	N	Α			Airbill Number: NA					
Sampled By:	V	Vindward E	Environmental LLC		Form filled out by	r. <u>J</u>	ennifer Par	ker/Dian	ne Janak	Turnaround r	Turnaround requested: Standard				
				<u> </u>											
							est(s) Reques	sted (check	test(s) required)	<u></u>					
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)						
9/10/2009	8:38	LPR8-M	1AFT-Comp26	1	Tissue	Х	Х	Х	Х		Comments / Instructions				
9/10/2009	9:30		1AFT-Comp31	1	Tissue	Х	Х	Х	Х		[Jar tag number(s)]				
9/12/2009	9:35		AFT-Comp27	1	Tissue	Х	X	X	X						
9/18/2009	10:35	<u> </u>	1AFT-Comp20	1	Tissue	Х	X	Х	Х						
9/18/2009	10:35	LPR5-N	1AFT-Comp21	1	Tissue	Х	Х	Х	Х						
9/18/2009	11:57	LPR5-N	AFT-Comp22	1	Tissue	Х	X	Х	Х						
9/18/2009	13:50	LPR4-M	AFT-Comp16	1	Tissue	Х	X	Х	Х						
9/18/2009	14:10	LPR4-N	AFT-Comp17	1	Tissue	Х	Х	Х	Х						
9/2/2009	15:46	LPR1-N	AFT-Ind145	1	Tissue	Х	Х	Х	Х						
		Total Nun	nber of Containers	9 of 19	Purchase Orc	ler / State	ement of W	ork# AA	.09_01LPR						
Company: Au Rec'd by: Company: Au Rec'd by: Company: Au Company: Au		Rec a by.			3) Released by: Company: Date/Time: Rec'd by: Company:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the compo Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and compos therefore, samples are released by Alpha Analytical. Sample names indicate whether sample is an individual (Ind) or composite (Comp).				oosite. osites:			
Company: Company: Date/Time: Thalia No.				Date/Time:											



To be comple	eted by Laboratory upon sample receipt:
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ondition upon receipt: عصائرة لمعرض	Time of receipt: 14:00
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1 of 4

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue						To: Alpha Ar			/tical		co	COC reference # LPR-AA-EEL		
Project Number: Task 16.1 (09.58.02.31)						Attn: Ellen Collins					Shipping Date: NA			
Contact Name: Jennifer Parker						Shipper:		NA			Airl	Airbill Number: NA		
Sampled By: Windward			ard Er	vironmental LLC		orm filled out by	: _	Jennifer Parl	ker/Dianr	ne Janak	Tur	naround requ	ested:	Standard
		·			·									
								Test(s) Reques	ted (check	test(s) required)	1		
Sample Collection Date (m/d/y) Time Sample Ide		ple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)						
8/11/2009	8:00	LPR	3-ARF	T-Comp20	1	Tissue	х	Х	Х	Х				s / Instructions number(s)]
8/11/2009	8:50	LPR3-ARFT-Comp06			1	Tissue	Х	Х	Х	Х			12	
8/11/2009	9:13	LPR3-ARFT-Ind005			1	Tissue	Х	Х	Х	Х				
8/11/2009	11:08	8 LPR3-ARFT-Comp05			1	Tissue	Х	Х	Х	Х				
8/12/2009	9:00	D LPR3-ARFT-Ind010			1	Tissue	Х	Х	Х	Х				
8/12/2009	12:28	LPR	3-ARF	T-Ind014	1	Tissue	Х	Х	Х	Х				
8/18/2009	8:05	LPR	5-ARF	T-Comp09	1	Tissue	Х	Х	Х	Х	·			
8/18/2009	8:15	LPR	S-ARF	T-Ind021	1	Tissue	Х	X	Х	Х				
8/18/2009	8:42	LPR	4-ARF	T-Ind022	1	Tissue	Х	Х	Х	Х				
8/18/2009	12:30	LPR	4-ARF	T-Ind026	1	Tissue	Х	Х	X	Х				
		Total	Numb	er of Containers	10 of 32	Purchase Ord	ier / Sta	tement of W	ork # AA	09_01LPR				
2) Released by: Company: Date/Time: Rec'd by: Company: Company: Rec'd by: Company: Date/Time: 7/30/10 /6 45 Company: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time Specimer Analytica therefore	corresponds to this were grouped to I. Alpha Analytica	ne earliest o together int I processed ased by Alp	ollected individ o composites b and homogenia ha Analytical. S	ual specir y Windwa zed the in	ital. The collection date men within the composite ard onsite at Alpha ndividuals and composite ames indicate whether the	
									To b	e complete	d by Lab	oratory u	pon sa	ample receipt:

Ward environmental LLC

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Project/Client N	ame: P	assaic RI/FS Tissue		To:	_A	lpha Anal	ytical		COC reference:	# LPR-AA-EELF-B
Project Number:	Attn: Ellen Collins			Shipping Date:	NA					
Contact Name:		Shipper: NA			Airbill Number:	NA				
Sampled By: Windward Environmental LLC				Form filled out by	: Je	ennifer Par	ker/Diani	ne Janak	— Turnaround requ	uested: Standard
	1		T							
					<u></u>	est(s) Reques	ted (check	test(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)		
8/19/2009	10:43	LPR5-ARFT-Comp12	1	Tissue	Х	Х	Х	Х	CC	Omments / Instructions
8/19/2009	10:51	LPR5-ARFT-Ind030	1	Tissue	Х	Х	Х	Х		[lar tag number(s)]
8/19/2009	12:44	LPR4-ARFT-Comp07	1	Tissue	Х	Х	Х	Х		
8/19/2009	12:44	LPR4-ARFT-Ind034	1	Tissue	Х	Х	Х	Х		
8/20/2009	11:59	LPR5-ARFT-Comp10	1	Tissue	Х	Х	Х	Х		
8/20/2009	12:25	LPR5-ARFT-Ind040	1	Tissue	Х	Х	Х	X		
8/20/2009	13:39	LPR4-ARFT-Comp08	1	Tissue	Х	Х	Х	X		
8/20/2009	14:42	LPR4-ARFT-Ind044	. 1	Tissue	Х	Х	Х	x		
8/21/2009	11:56	LPR5-ARFT-Ind049	1	Tissue	Х	X	Х	х		
8/21/2009	12:09	LPR5-ARFT-Ind048	1	Tissue	Х	х	Х	х		
Total Number of Containers			10 of 32	Purchase Ord	er / State	ment of W	ork # AA	09_01LPR		
1) Released by:				3) Released by: NOTES			TES			
aflower -							Individual	specimens were coll	lected by Windward Env	vironmental. The collection date
Company:				Company: Sp			and time corresponds to the earliest collected individual specimen within the composite Specimens were grouped together into composites by Windward onsite at Alpha			
Date/Time: 7/2-0/10 /6-45 Rec'd by:				Date/Time:		ĺ	therefore,	samples are released	d by Alpha Analytical, S	zed the individuals and composites; ample names indicate whether the
Rec'd by: Rec'd by: Rec'd by: Rec'd by:					an individual (Ind) oi	r composite (Comp).				
Date/Time:	0/10 164	Company: Date/Time:		Company: Date/Time:						



To be comple	eted by Laboratory upon sample receipt:
Pate of receipt: 1/20/10	Laboratory W.O. #: 1_1009361
Condition upon receipt: SATIS FACIDAY	Time of receipt: 16 95
Cooler temperature: N/A	Received by:

Date/Time:

	Ward
VV II.	environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date/Time:

Date of receipt: $7/20/60$	Laboratory W.O. #: \L\DD936\
Condition upon receipt: SAHS HACLORY	Time of receipt: /4/5
Cooler temperature:	Received by: White the

To be completed by Laboratory upon sample receipt:

CHAIN-OF-CUSTODY/TEST REQUEST FORM of COC reference: # LPR-AA-EELF-D Alpha Analytical Passaic RI/FS Tissue Project/Client Name: To: Task 16.1 (09.58.02.31) Ellen Collins NA Shipping Date: Attn: Project Number: NA Airbill Number: NA Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) Alkylated PAHs (8270C) (SM2540G Mod) SVOCs (8270C) PCB Aroclors (8082) Moisture Sample Collection # of Sample Identification Matrix Date (m/d/y) Time Containers Comments / Instructions Х Х Х Х 1 Tissue 9/2/2009 14:59 LPR2-ARFT-Comp04 [lar.tag.number(s)] Х Х Х Х 1 Tissue 9/5/2009 12:03 LPR1-ARFT-Ind085 **Total Number of Containers** 2 of 32 Purchase Order / Statement of Work # AA09 01LPR NOTES 1) Released by: 2) Released by: 3) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical, Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Ward environmental LLC

Pate of receipt:: 7/20/10	Laboratory W.O. #: レレーロタコレー
ondition upon receipt: 5A 73 factory	Time of receipt: 169
cooler temperature: V/+	Received by: ///////

CHAIN-OF-CUSTODY/TEST REQUEST FORM Passaic RI/FS Tissue Project/Client Name: Alpha Analytical COC reference # LPR-AA-RB7 To: Ellen Collins 09.58.02.31 (Task 16.1) NA Project Number: Shipping Date: Attn: Jennifer Parker NA NA Airbill Number: Shipper: Contact Name: Windward Environmental LLC Jennifer Parker/Ellen Collins Turnaround requested: Standard Form filled out by: Sampled By: Test(s) Requested (check test(s) required) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions Х Χ Χ 7/19/2010 12:30 LPR-071910-RB Water [lar tag_number(s)] Purchase Order / Statement of Work # AA09_01LPR **Total Number of Containers** 6 1) Released by: 2) Released by: 3) Released by: NOTES Company: Company: Date/Time: Date/Time: Rec'd by: Rec'd by: Company: Company: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Date of receipt:: 7/19/2010	Laboratory W.O.#: L1909ろし\
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Condition upon receipt: Satisfactory	Time of receipt: \\3\\0000000
Cooler temperature: $ u u $	Received by:

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Passaic RI/FS Tissue

Project/Client Name:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: <u>F</u>	Passaic R	I/FS Tissue	To: Alpha Analytical				CC	OC reference	# LF	PR-AA-EELWB-A		
Project Number: Task 16.1 (0			(09.58.02.31)	31) Attn:			Ellen Collins				ipping Date:	NA	
Contact Name: Jennifer Parker					Shipper: NA			<u> </u>			rbill Number:	NA	
Sampled By: Windward Environmental LLC				Form filled out by: Jennifer Parker/Dianne Janak			ne Janak		rnaround requ		Standard		
	i			'' 									
							est(s) Reque	sted (check	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sa	imple Identification	# of Containers	Matrix	SVOCs (8270C)	Percent Moisture (SM2540G Mod)	PCB Aroclors (8082)	Alkylated PAHs (8270C)				
9/2/2009	14:59	LPR2-AI	RCT-Comp04	1	Tissue	Х	Х	Х	Х		1		/ Instructions
9/5/2009	12:03	LPR1-AF	RCT-Ind085	1	Tissue	Х	х	Х	Х			frar rag	number(s)]
8/11/2009	7:46	LPR3-AF	RWB-Ind001	1	Tissue	Х	Х	Х	Х				
8/11/2009	11:30	LPR3-AF	RWB-Ind009	1	Tissue	Х	х	Х	Х				
8/12/2009	11:36	LPR3-AF	RWB-Ind012	1	Tissue	X	Х	Х	Х	***			
8/18/2009	11:28	LPR4-AF	RWB-Ind024	1	Tissue	X	Х	Х	Х				
8/18/2009	12:39	LPR4-AF	LPR4-ARWB-Ind025		Tissue	Х	Х	х	Х				
8/20/2009	12:30	LPR5-AF	LPR5-ARWB-Ind039		Tissue	Х	Х	Х	Х				
8/20/2009	14:42	LPR4-AF	RWB-Ind043	1	Tissue	Х	Х	Х	Х				
8/21/2009	11:50	LPR5-ARWB-Comp11		1	Tissue	Х	Х	Х	Х	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
		Total Nun	nber of Containers	10 of 21	Purchase Ord	er / State	ment of W	ork # AA0	9_01LPR		· · · · · · · · · · · · · · · · · · ·		
1) Released by: Company: Date/Time: Company: Date/Time: Company: Rec'd by: Company: Company: Company: Company: Date/Time: Date/Time: Date/Time:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			Specimens Analytical. therefore,	orresponds to the were grouped tog Alpha Analytical pi	earliest c gether int rocessed ed by Alp	ollected individu o composites by and homogenizo ha Analytical. Sa	al specim Windwar ed the inc	al. The collection date nen within the composite, rd onsite at Alpha dividuals and composites; nes indicate whether the	
	1		200 West Me	vroor Stroot	e par la la la la la la la la la la la la la	- 50/11/20/20 (0.3)	ο <i>Γ</i> .	To be	completed I	by Lab	oratory up	on sar	mple receipt:
	/		200 YYC3L IVIC	いっしい ひいたたい	1922 (1844 (1846 (etiset AssalaMeNRARY	CONTRACTOR AND THE PROPERTY OF THE PARTY OF	√2.65 is 15 i	unio uno so di Principi della	wgapilwiii	anathantoitsiäilisiäNi	4m. H - 17 3 16 16	A GARACTA CARACTA Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

- / IVIII- 14 1			<i>y</i>
Date of receipt:: $7/20/$	10	Laboratory W.O. #: \	_10093 \ 3
Condition upon receipt: ろみ ナル	FA Chony	Time of receipt:	695,
		Received by:	reh-
		- F-/ K	

	H
A Morre /2	
Company //	74A
Date/Fine:	
7/20/10	1645
integration of	A
Allegress	10.40 -
Company.	8/16 1645
Date/Time: 190	/

Date/Time: Rec'd by:

Company:

Date/Time:

Analytical, Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Rec'd by:

Company:

Date/Time:

To be comple	eted by Laboratory upon sample receipt:
len Cozin Generalis (1963), protesta di Corta di Brata e proposita de di Caracia di Caracia di Caracia di Cara	Laboratory W.O. #: しいつつらいしる
Condition upon receipt: 5Atosfactory	Time of receipt: 16 45
Cooler temperature: V/4	Received by: Umay

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue COC reference: # LPR-AA-EELWB-C Project/Client Name: To: Alpha Analytical Task 16.1 (09.58.02.31) Ellen Collins Project Number: Attn: Shipping Date: NA Jennifer Parker NA Airbill Number: NA Contact Name: Shipper: Windward Environmental LLC Jennifer Parker/Dianne Janak Sampled By: Form filled out by: Turnaround requested: Standard Test(s) Requested (check test(s) required) Percent Moisture (SM2540G Mod) Alkylated PAHs (8270C) SVOCs (8270C) PCB Aroclors (8082) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions 9/9/2009 11:25 LPR8-ARWB-Comp19 1 Tissue Х Х Х Х [lar tag pumber(s)] **Total Number of Containers** 1of 21 Purchase Order / Statement of Work # AA09 01LPR 1) Released by: 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Company: Company: Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp), Rec'd by: Rec'd by:

Company:

Date/Time:

X X/ /*	V7 1
1 1 1	nd/Ward
VV I	A Langing montal LLC
	environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

	TO DO COLLIDIO	court Eurolucot	, abon sampic receipt.
	• • • • • • • • • • • • • • • • • • • •		
Date of receipt: $760/22$		Laboratory W.O. #: 1	こしつりょうしろ
			<u> Harrista kundan ke kali alampa da interbak</u> a

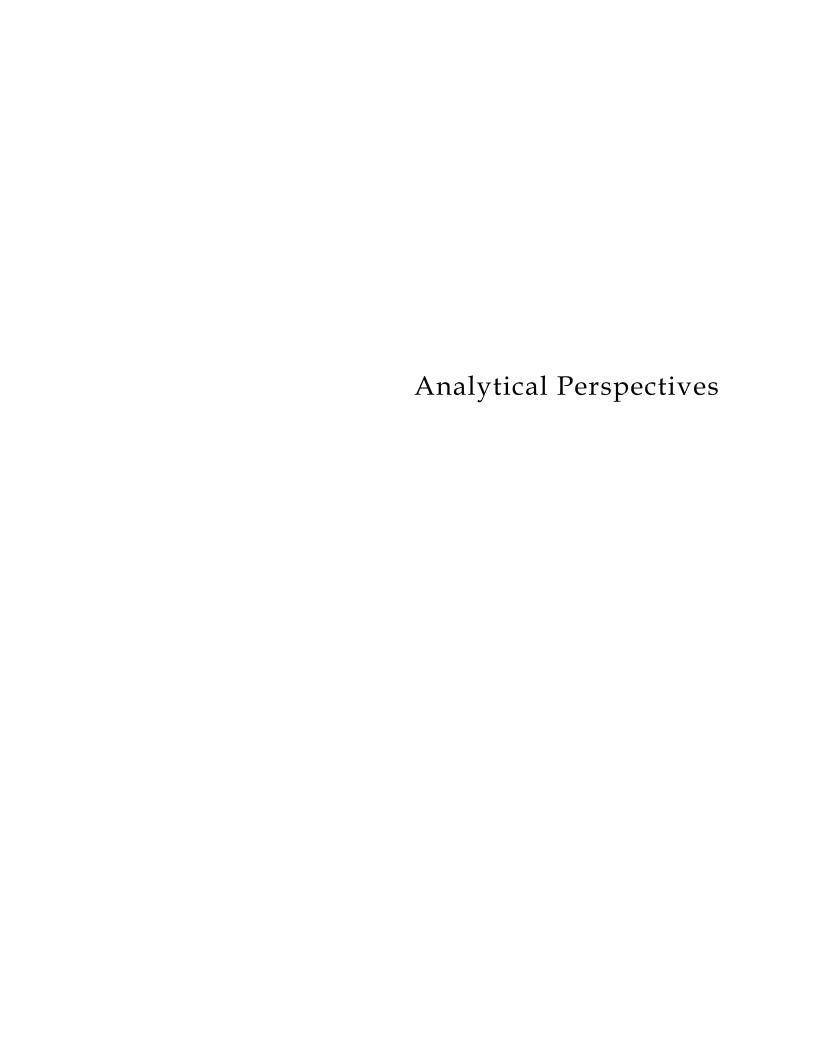
Condition upon receipt: SATISTACTORY

Cooler temperature: ////// Rec

Received by: /

Time of receipt:

To be completed by Laboratory upon sample receipts



1		of	3

P 2102

Project/Client Name: Passaic RI/FS Tissue			То:	Analy	ytical Pe	rspective	<u>s</u>		# LPR-AP-MH-1A				
Project Number:	_09	.58.02.31		Attn:			/lace			Shipping Date:	03/23/2010		
Contact Name:	tact Name: Jennifer Parker				Shipper: UPS					Airbill Number	: 1 <u>Z19E18E0143859</u> 4		
Sampled By:	W	indward E	Environmental LLC		Form filled out by:	Jenni	fer Parke	er / Diane .	Janak	Turnaround re	Turnaround requested: Standard		
							est(s) Reque	ested (check	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)			(Comments / Instructions [Jar tag number(s)]		
8/26/2009	07:12	LPR6-CS	MH-Comp37	1	Tissue	X	Х						
9/15/2009	09:58	LPR6-CS	MH-Comp38	1	Tissue	Х	Х						
8/20/2009	13:03	LPR4-CS	MH-Comp31	1	Tissue	Х	Х						
8/27/2009	07:13	LPR6-CS	MH-Comp41	1	Tissue	Х	Х						
8/25/2009	07:26	LPR6-CS	MH-Comp42	1	Tissue	Х	Х						
8/27/2009	07:52	LPR6-CS	MH-Comp44	1	Tissue	Х	Х		<u> </u>				
8/25/2009	09:24	LPR7-CS	MH-Comp45	1	Tissue	X	Х						
8/25/2009	09:24	LPR7-CS	MH-Comp46	1	Tissue	X	Х						
8/25/2009	09:35	LPR7-CS	MH-Comp49	1	Tissue	- X	Х		1.				
8/26/2009	08:58	LPR7-CS	MH-Comp53	1	Tissue	Х	<u> </u>						
		Total Num	ber of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wo	ork # AP09_	05LPR				
1) Released by: Company Ajana Data Ting:	Analytical	10	2) Released by: Company: Date/Time:		3) Released by: Company: Date/Time:			4) Released Company Date/Time	: e:	Wind date colle com	vidual specimens were collected by dward Environmental. The collection and time corresponds to the earliest acted individual specimen within the posite. Specimens were grouped		
Company:	Rec'd by: Company:			Rec'd by: Company: Date/Time:	· · · · · · · · · · · · · · · · · · ·		Company	:	onsit Anal the c	ther into composites by Windward te at Alpha Analytical. Alpha ytical processed and homogenized composites; therefore, samples are used by Alpha Analytical.			

Wind Ward environmental LLC

Date of receipt:: 24 Mar 10	Laboratory W.O. #: P2/02
Condition upon receipt:	Time of receipt: 10:20
Cooler temperature: — / / °	Received by DWI 4.0 40 0 4.0 A

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Analytical Perspectives

P 2102

LPR-AP-MH-1C

Project Number:				ո։	Kim Mace					Shipping Date: 03/23/2010		
Contact Name: Sampled By:		nnifer Parker ndward Environmental LLC		Shipper: Form filled out by:						Airbill Number: <u>[Z19E18E0143859</u>] Turnaround requested: Standard		
					• То	est(s) Requ	ested (check t	est(s) required)				
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					nments / Instructions ar tag number(s)]	
9/2/2009	15:46	LPR1-CSMH-Comp04	1	Tissue	Х	Х						
	W 400000											
								<u> </u>				
		 	1 of 21	Purchase Ord	er / Statem	l ent of Wo	_ ork # AP09_(J DSLPR				
1) Released by:	l	2) Released by:	· · · · · · · · · · · · · · · · · · ·	3) Released by:	,		4) Released	by:		NOTES		
Company: Alpha / Date/Time: Rec d by: Company: Date/Time:	Apralytical 1710	Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time Rec'd by: Company: Date/Time	X.		Windward date and t collected i composite together ii onsite at A processed	specimens were collected by Environmental. The collection ime corresponds to the earliest ndividual specimen within the . Specimens were grouped to composites by Windward lpha Analytical. Alpha Analytical and homogenized the s; therefore, samples are released inalytical.	



Date of receipt:: 24 Nav 10	Laboratory W.O. #: P21032 Com
Condition upon receipt:	Time of receipt: 10:20
Cooler ternperature: -/6°	Received by Musselwhite

P2103

Project Number: Contact Name:	09.	58.02.31	Attı								
Contact Name			AU	n:	Kim Ma	ce		Shipping	Shipping Date: 03/23/2010		
Contact Harrie.	Jer	nnifer Parker	Shipper:		UPS			Airbill N	umber: 1219E18E 01 4385 9		
Sampled By:	Wir	ndward Environmental LLC	For	rm filled out by:	Jennife	Parker	/ Diane Janak	Turnaro	und requested: Standard		
			T	İ	<u> </u>		· · · · · · · · · · · · · · · · · · ·		1		
						est(s) Reque	ested (check test(s) require	ed)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			Comments / Instructions [Jar tag number(s)]		
9/10/2009 1	13:02	LPR8-CSMH-Comp61	1	Tissue	Х	Х					
8/25/2009	09:39	LPR7-CSMH-Comp48	1	Tissue	Х	Х					
9/9/2009	09:54	LPR8-CSMH-Comp54	1	Tissue	Х	Х					
8/25/2009 0	09:35	LPR7-CSMH-Comp50	1	Tissue	Х	Х					
9/9/2009	09:54	LPR8-CSMH-Comp55	1	Tissue	Х	Х					
9/8/2009 0	08:44	LPR8-CSMH-Comp56	1	Tissue	Х	Х					
9/9/2009	08:56	LPR8-CSMH-Comp57	1	Tissue	Х	Х					
9/1/2009 1	12:33	LPR1-CSMH-Comp01	1	Tissue	Х	X					
9/2/2009 1	15:02	LPR1-CSMH-Comp02	1	Tissue	Х	Х					
9/2/2009 1	15:46	LPR1-CSMH-Comp03	1	Tissue	X	X					
	T	otal Number of Containers	10 of 21	Purchase Ord	er / Statem	ent of Wo	ork # AP09_05LPR				
1) Released by:	4	2) <u>Released by:</u>		3) Released by:			4) <u>Released by:</u>		NOTES Individual specimens were collected by		
Company: Alpha Mail	lytical	Company:		Company:			Company:		Windward Environmental. The collection date and time corresponds to the earliest		
Date/Time:	2	Date/Time:		Date/Time:			Date/Time:		collected individual specimen within the composite. Specimens were grouped		
Recidity:	O	Rec'd by:		Rec'd by:			Rec'd by:		together into composites by Windward onsite at Alpha Analytical. Alpha		
Company: Date/Time:		Company: Date/Time:		Company: Date/Time:	:		Company: Date/Time:		Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.		



Date of receipt:: 24 Nav 10	Laboratory W.O. #: P2103
Condition upon receipt:	Time of receipt: 10:20
Cooler temperature: -/6°	Received by Musse Junit

Project/Client Name:

Passaic RI/FS Tissue

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Analytical Perspectives

72133

#LPR-AP-CT-A

Jennifer Parker Windward Environmental LLC Sample Identification LPR4-CSCT-Comp31 LPR1-CSCT-Comp01 LPR1-CSCT-Comp02 LPR1-CSCT-Comp03	# of Containers 1	Shipper: Form filled ou Matrix Tissue	, <u></u>	est(s) Reque	rker ested (check test(s) required)	Turna	Number: 1219E/BE 014355 3 pround requested: Standard Comments / Instructions
Sample Identification LPR4-CSCT-Comp31 LPR1-CSCT-Comp01 LPR1-CSCT-Comp02	Containers 1 1	Matrix	PCB Congeners (1668A)	est(s) Reque		<u> </u>	
3 LPR4-CSCT-Comp31 3 LPR1-CSCT-Comp01 2 LPR1-CSCT-Comp02	Containers 1 1		PCB Congeners (1668A)	T '	ested (check test(s) required)		Comments / Instructions
3 LPR4-CSCT-Comp31 3 LPR1-CSCT-Comp01 2 LPR1-CSCT-Comp02	Containers 1 1		<u> </u>	PCDDs/PCDFs (1613B)			Comments / Instructions
LPR1-CSCT-Comp01 LPR1-CSCT-Comp02	1	Tissue	V		1	<u>i_</u>	[Jar tag number(s)]
2 LPR1-CSCT-Comp02	-		_ ^	X			
		Tissue	Х	Х			
6 LPR1-CSCT-Comp03	1	Tissue	Х	Х			
o Li Kii Coci Compos	1	Tissue	Х	Х			
6 LPR1-CSCT-Comp04	1	Tissue	X	Х			
4 LPR1-CSCT-Comp06	1	Tissue	Х	Х			
3 LPR1-CSCT-Comp07	1	Tissue	Х	Х			
9 LPR1-CSCT-Comp11	1	Tissue	Х	Х			
1 LPR4-CSCT-Comp30	1	Tissue	Х	Х			
9 LPR1-CSCT-Comp13	1	Tissue	Х	Х			
Total Number of Containers	10 of 24	Purchase Ord	er / Statem	ent of Wo	rk # AP09_05LPR		
2) Released by:		3) Released by:			4) Released by:		5) Released by:
Company:		Company:			Company:		Company:
Date/Time:		Date/Time:			Date/Time:		Date/Time:
Rec'd by:		Rec'd by:			Rec'd by:		Rec'd by:
Company: Date/Time:		Company: Date/Time:			Company: Date/Time:		Company: Date/Time:
	LPR1-CSCT-Comp13 Total Number of Containers 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	LPR1-CSCT-Comp13 1 Total Number of Containers 10 of 24 2) Released by: Company: Date/Time: Rec'd by: Company:	LPR1-CSCT-Comp13 1 Tissue Total Number of Containers 10 of 24 Purchase Ord 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time: Date/Time:	LPR1-CSCT-Comp13 1 Tissue X Total Number of Containers 10 of 24 Purchase Order / Statem 2) Released by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time: Date/Time:	LPR1-CSCT-Comp13 1 Tissue X X Total Number of Containers 10 of 24 Purchase Order / Statement of Wo 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:	LPR1-CSCT-Comp13 1 Tissue X X Total Number of Containers 10 of 24 Purchase Order / Statement of Work # AP09_05LPR 2) Released by: 4) Released by: Company: Date/Time: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:	LPR1-CSCT-Comp13 1 Tissue X X Total Number of Containers 10 of 24 Purchase Order / Statement of Work # AP09_05LPR 2) Released by: 4) Released by: Company: Date/Time: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:

Date of receipt:: 08 Apr 10 Laboratory W.O. #: P2133

Condition upon receipt: 3000 Time of receipt: 10:22

Cooler temperature: 10 Received by: Musselm 1.

2 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue			То:		Analytical	Perspectives	erspectives # LPR-AP-CT-B					
Project Number	: <u>0</u>	9.58.02	2.31		Attn:	_!	Kim Mace			Shipping Date: 4/7/10		
Contact Name:	J	ennifer	Parker		Shipper:					Airbill Number:	17.19ET8E 014355 318	
Sampled By: Windward Environmental LLC				Form filled out b	ру:	lennifer Pa	arker		Turnaround req			
<u> </u>				1	1					1		
							est(s) Reque	sted (check test(s) re	equired)			
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			c	omments / Instructions [Jar tag number(s)]	
9/1/2009	12:09	LPR2	2-CSCT-Comp14	1	Tissue	Х	Х					
9/1/2009	11:03	LPR2	2-CSCT-Comp17	1	Tissue	Х	X					
9/1/2009	10:02	LPR2	2-CSCT-Comp15	1	Tissue	Х	Х					
9/3/2009	12:35	35 LPR2-CSCT-Comp18 1		1	Tissue	Х	Х					
9/1/2009	11:32	11:32 LPR2-CSCT-Comp19 1		1	Tissue	Х	X					
9/1/2009	11:32	11:32 LPR2-CSCT-Comp20 1		1	Tissue	X	Х					
8/11/2009	10:08	LPR3	3-CSCT-Comp24	1	Tissue	Х	X					
8/18/2009	07:43	LPRS	5-CSCT-Comp34	1	Tissue	Х	Х					
8/12/2009	10:29	LPR3	3-CSCT-Comp26	1	Tissue	Х	Х					
8/18/2009	10:35	LPR4	1-CSCT-Comp32	1	Tissue	Х	Х					
		Total N	Number of Containers	10 of 24	Purchase Ord	er / Stater	nent of Wo	rk # AP09_05LPR				
1) Released by:	Az.		2) Released by:		3) Released by:			4) Released by:		5) Rele a	sed by:	
Company	41		Company:		Company:			Company:		Comp	any:	
Date/Time	/	_	Date/Time:		Date/Time:			Date/Time:		Date/	lime:	
Rec'd by:) 1610 De)	Rec'd by:		Rec'd by:			Rec'd by:		<u>Rec'd</u>	by:	
Company: Date/Time:	<i></i>		Company: Date/Time:		Company: Date/Time:			Company: Date/Time:		Comp Date/	-	
*5	n ned	10 a	a in Whia	11-10	4							

Wind Ward environmental LLC

To be comple	eted by Laboratory	upon sa	mple receipt:
. Angle			

Date of receipt:: 08 Apr 10	Laboratory W.O. #: PJ (3 U
Condition upon receipt: 200 D	Time of receipt: 10:22
Cooler temperature:	Received by Musselwhile

Project/Client Name: Passaic RI/FS Tissue		To:	То:		tical Pers	spectives	# LPR-AP-CT-C			
Project Number: 09.58.02.31		——— Att	Attn:		lace		Shipping Date:	4/7/10		
Contact Name: Jennifer Parker Sampled By: Windward Environmental LLC			 Shipper:				— Airbill Number:	1219E18E 014355 31		
			m filled out by:	Jennif	er Parker		Turnaround requ	ested: Standard		
				<u> </u>	<u> </u>	T				
							T	ested (check test(s) required)		
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			mments / Instructions [Jar tag number(s)]
8/18/2009	12:01	LPR4-0	CSCT-Comp33	1	Tissue	Х	Х			
8/11/2009	07:21	LPR3-0	CSCT-Comp27	1	Tissue	Х	Х			
8/13/2009	11:52	LPR3-0	CSCT-Comp28	1	Tissue	Х	Х			
8/21/2009	13:46	LPR5-0	CSCT-Comp35	1	Tissue	Х	Х			
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Total Nu	umber of Containers	4 of 24	Purchase Ord	er / Staten	nent of Wo	ork # AP09_05LPR		
1) Released by:			2) Released by:		3) Released by:			4) Released by:	5) Releas	ed by:
Company: Company: Company: Date/Time:	HA 1610		Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:	Compa Date/Ti Rec'd I Compa Date/Ti	me: ny:
& Samples in this project				₹	L Su	prwim	s page f	To be completed b	y Laboratory up	ρί ໄΟ oon sample receipt:

Ward Ward environmental LLC

To be comple	To be completed by Laboratory upon sample receipt:					
Date of receipt::	Laboratory W.O. #:					
Condition upon receipt:	Time of receipt:					
Cooler temperature:	Received by:					

1 of <u>2</u>

CHAIN-OF-CUSTODY/TEST REQUEST FORM

58.02.31 nnifer Parker ndward Environmental LLC		Attn: Shipper:	-	Kim Mace)	Shipping [Date: 4/7/10		
		Shipper:	_			Shipping Date: 4/7/10			
ndward Environmental LLC			Shipper:			Airbill Nun	Airbill Number: 12/9E/8E0/4275 5/3		
		Form filled	d out by:	Jennifer F	Parker	Turnaroun	d requested: Standard		
				Test(s) Reque	ested (check test(s) required)				
Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)	The content established the content established to the content established		Comments / Instructions [Jar tag number(s)]		
LPR8-CSMH-Comp58	1	Tissue	Х	X					
LPR1-CSMH-Comp06	1	Tissue	Х	Х					
LPR1-CSMH-Comp07	1	Tissue	Х	Х					
LPR1-CSMH-Comp11	1	Tissue	Х	Х					
LPR4-CSMH-Comp30	1	Tissue	Х	Х			V Note: Correct		
LPR1-CSMH-Comp13	1	Tissue	Х	Х		- 11	ection date/time for		
LPR2-CSMH-Comp14	1	Tissue	Х	Х		ll ll	R4-CSMH-Comp30 is		
LPR2-CSMH-Comp17	1	Tissue	Х	Х		8/1	8/2009 at 11:41.		
LPR2-CSMH-Comp15	1	Tissue	Х	Х					
LPR2-CSMH-Comp18	1	Tissue	X	Х					
otal Number of Containers	10 of 20	Purchase Ord	er / Stater	ment of Wo	ork # AP09_05LPR				
2) Released by:		3) Released by:			4) Released by:	5	Released by:		
Company:		Company:			Company:		Company:		
Date/Time: Date/Time:		Date/Time:			Date/Time:		Date/Time:		
Rec'd by:		Rec'd by:			Rec'd by:		Rec'd by:		
Company: Date/Time:		Company: Date/Time:	4.		Company: Date/Time:		Company: Date/Time:		
	LPR8-CSMH-Comp58 LPR1-CSMH-Comp06 LPR1-CSMH-Comp07 LPR1-CSMH-Comp11 LPR4-CSMH-Comp30 LPR1-CSMH-Comp13 LPR2-CSMH-Comp14 LPR2-CSMH-Comp17 LPR2-CSMH-Comp15 LPR2-CSMH-Comp18 otal Number of Containers 2) Released by: Company: Date/Time: Rec'd by: Date/Time:	Sample Identification Containers LPR8-CSMH-Comp58 1 LPR1-CSMH-Comp06 1 LPR1-CSMH-Comp07 1 LPR1-CSMH-Comp11 1 LPR4-CSMH-Comp30 1 LPR2-CSMH-Comp13 1 LPR2-CSMH-Comp14 1 LPR2-CSMH-Comp15 1 LPR2-CSMH-Comp15 1 LPR2-CSMH-Comp18 1 otal Number of Containers 10 of 20 2) Released by: Company: Date/Time: Rec'd by: Company:	Sample Identification Containers Matrix LPR8-CSMH-Comp58 1 Tissue LPR1-CSMH-Comp06 1 Tissue LPR1-CSMH-Comp07 1 Tissue LPR1-CSMH-Comp11 1 Tissue LPR4-CSMH-Comp30 1 Tissue LPR4-CSMH-Comp13 1 Tissue LPR2-CSMH-Comp14 1 Tissue LPR2-CSMH-Comp17 1 Tissue LPR2-CSMH-Comp17 1 Tissue LPR2-CSMH-Comp15 1 Tissue LPR2-CSMH-Comp18 1 Tissue Otal Number of Containers 10 of 20 Purchase Ord 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time:	LPR8-CSMH-Comp58 LPR1-CSMH-Comp06 LPR1-CSMH-Comp07 LPR1-CSMH-Comp17 LPR1-CSMH-Comp11 LPR4-CSMH-Comp13 LPR1-CSMH-Comp13 LPR2-CSMH-Comp14 LPR2-CSMH-Comp17 LPR2-CSMH-Comp15 LPR2-CSMH-Comp15 LPR2-CSMH-Comp15 LPR2-CSMH-Comp18 Company: Date/Time: Rec'd by: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time: Date/Time: Company: Date/Time:	LPR8-CSMH-Comp58 1 Tissue X X LPR1-CSMH-Comp06 1 Tissue X X LPR1-CSMH-Comp07 1 Tissue X X LPR1-CSMH-Comp11 1 Tissue X X LPR4-CSMH-Comp11 1 Tissue X X LPR4-CSMH-Comp30 1 Tissue X X LPR1-CSMH-Comp13 1 Tissue X X LPR2-CSMH-Comp14 1 Tissue X X LPR2-CSMH-Comp17 1 Tissue X X LPR2-CSMH-Comp15 1 Tissue X X LPR2-CSMH-Comp18 1 Tissue X X Otal Number of Containers 10 of 20 Purchase Order / Statement of Words Y 2) Released by: Company: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time: Date/Time:	LPR8-CSMH-Comp58	LPR8-CSMH-Comp58 1 Tissue X X LPR1-CSMH-Comp06 1 Tissue X X LPR1-CSMH-Comp07 1 Tissue X X LPR1-CSMH-Comp17 1 Tissue X X LPR4-CSMH-Comp30 1 Tissue X X LPR4-CSMH-Comp13 1 Tissue X X LPR1-CSMH-Comp13 1 Tissue X X LPR2-CSMH-Comp14 1 Tissue X X LPR2-CSMH-Comp17 1 Tissue X X LPR2-CSMH-Comp17 1 Tissue X X LPR2-CSMH-Comp15 1 Tissue X X LPR2-CSMH-Comp18 1 Tissue X X LPR2-CSMH-Comp18 1 Tissue X X LPR2-CSMH-Comp18 1 Tissue X X Company: Date/Time: Date/Time: Date/Time: Company:		

Wind Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 To be completed by Laboratory upon sample receipt:

Date of receipt:: OS HOR IO	Laboratory W.O. #: 🎾					
Condition upon receipt: 900d	Time of receipt: 10:22					
Cooler temperature: 3	Received by: Musselmhit					

Project/Client Name:

Project Number:

Passaic RI/FS Tissue

09.58.02.31

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Kim Mace

To:

Attn:

Analytical Perspectives

Shipping Date:

LPR-AP-MH-Brev

Contact Name:	Jer	nnifer Parker	Sh	ipper:	Airbill Number:				
Sampled By:		ndward Environmental LLC	Fo	rm filled out by:	Jennifer Parke		(er	Turnaround request	ted: Standard
						est(s) Reque	sted (check te	est(s) required)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			Comments / Instructions
9/1/2009	11:32	LPR2-CSMH-Comp19	1	Tissue	X	Х			[lar tag number(s)]
9/1/2009	11:32	LPR2-CSMH-Comp20	1	Tissue	X	X			
8/11/2009	10:08	LPR3-CSMH-Comp24	1	Tissue	Х	Х			
8/18/2009	07:43	LPR5-CSMH-Comp34	1	Tissue	Х	Х			Alpha ID L1003087-36 on bag
8/12/2009	10:29	LPR3-CSMH-Comp26	1	Tissue	Х	Х			
8/18/2009	10:35	LPR4-CSMH-Comp32	1	Tissue	Х	X			
8/18/2009	12:01	LPR4-CSMH-Comp33	1	Tissue	X	X			
8/11/2009	07:21	LPR3-CSMH-Comp27	1	Tissue	Х	X			
8/13/2009	11:52	LPR3-CSMH-Comp28	1	Tissue	X	X			
8/21/2009	13:46	LPR5-CSMH-Comp35	1	Tissue	X	X			
	7	Total Number of Containers	10 of 20	Purchase Orde	er / Staten	nent of Wo	rk # AP09_0	5LPR	
1) Released by:		2) Released by:		3) Released by:			4) Released	<u>by:</u>	5) <u>Released by:</u>
Company:		Company:		Company:			Company:		Company:
Date/Time:		Date/Time:		Date/Time:			Date/Time:		Date/Time:
Rec'd by:		Rec'd by:		Rec'd by:			Rec'd by:		Rec'd by:
Company: Date/Time:		Company: Date/Time:		Company: Date/Time:			Company: Date/Time		Company: Date/Time:



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt:: 08 AOR 10	Laboratory W.O. #: P2140
	Time of receipt: 10:22
Cooler temperature: 3°	Received by Musselveto

To be completed by Laboratory upon sample receipt:

Project/Client Name: Passaic RI/FS Tissue			То:			Analytical Perspe	ctives	# LPR-AP-MH-2B		
Project Number: 09.58.02.31			Attn:			Kim Mace	9	Shipping Date:	4/7/10	
Contact Name: Jennifer Parker			- Shipper:		_			Airbill Number: 12	19E18E 01/275 57.	
Sampled By:	_	Windward Environmental LLC		Form filled	out by:	_	Jennifer Parker			
. ,		***************************************		-		-				
					Te	est(s) Requ	uested (check test(s) req	uired)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)				nents / Instructions tag number(s)]
9/1/2009	11:32	LPR2-CSMH-Comp19	1	Tissue	Х	х				
9/1/2009	11:32	LPR2-CSMH-Comp20	1	Tissue	Х	X				
8/11/2009	10:08	LPR3-CSMH-Comp24	1	Tissue	Х	X				
8/21/2009	13:46	LPR5-CSMH-Comp35	1	Tissue	x /	X				
8/12/2009	10:29	LPR3-CSMH-Comp26	1	Tissue	X	X				
8/18/2009	10:35	LPR4-CSMH-Comp32	1	Tissue	Х	X				
8/18/2009	12:01	LPR4-CSMH-Comp33	1	Tissue	Х	X				
8/11/2009	07:21	LPR3-CSMH-Comp27	1	Tissue	Х	х				
8/13/2009	11:52	LPR3-CSMH-Comp28	1	Tissue	Х	х				
8/21/2009	13:46	LPR5-CSMH-Comp35	1	Tissue	X	x				
		Total Number of Containers	10 of 20	Purchase Ord	er / Statem	ent of W	ork # AP09_05LPR			
1) Released by:		2) Released by:		3) Released by:			4) Released by:		5) Released	<u>by:</u>
Company: Date/Time: Company: Date/Time:	1440	Company: Date/Time: Company: Date/Time:	nd on ported	Company: Date/Time: Rec'd by: Company: Date/Time:) \10		Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:	
		/ 200.W. + 1.4	(h)	S Allo			To be compl	eted by L	aboratory upor	n sample receipt:



Suite 401 Seattle, WA 98119

Tel: (206) 378-1364
Fax: (206) 217-9343

To be comple	eted by La	aboratory	upon sampl	e receipt:

Date of receipt::	Laboratory W.O. #:					
Condition upon receipt:	Time of receipt:					
Cooler temperature:	Received by:					

1 of 1

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Analytical Perspectives

P 2159

LPR-AP-HT-A

Project Number: 09.58.02.31			Attn:		Kim Mace				Shipping Date: 4/14/2010		
Contact Name: Jennifer Parker			Sł	nipper:	UPS				Airbill Number: 12 19618601426729		
Sampled By: Winds		indward Environmental LLC	Fo	orm filled out by:	Jennif	er Parker	/Dianne Janak	1	Furnaround requested: Standard		
Sample Collection Date (m/d/y) 9/1/2009 9/1/2009	Time 13:10 11:03	Sample Identification LPR1-CSHT-Comp05 LPR2-CSHT-Comp63	# of Containers 1 1	Matrix Tissue Tissue	X X (1668A)	X X (1613B)	ested (check test(s)	required)	Comments / Instructions [Jar tag number(s)]		
9/3/2009	11:10	LPR1-CSHT-Comp09	1	Tissue	X	X					
8/11/2009	07:21	LPR3-CSHT-Comp64	1	Tissue	X	X					
9/2/2009	14:13	LPR2-CSHT-Comp21	1	Tissue	X	X					
8/25/2009	09:24	LPRX-CSHT-Comp65	1	Tissue	X	X					
9/8/2009	07:48	LPR8-CSHT-Comp66	1	Tissue	X	X	ļ				
	ີ າ	Total Number of Containers	7	Purchase Orde	er / Statem	ent of Wo	rk # AP09_05LPF	₹			
1) Released by: Company: Date / Time:	1400 5	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.		
							To be con	npleted by L	aboratory upon sample receipt:		



Date of receipt:: 15 Apr 10	Laboratory W.O. #: P2159
Condition upon receipt:	Time of receipt: 10:21
Cooler temperature:	Received by: Phuselentte

composites; therefore, samples are released

by Alpha Analytical.

Project/Client Name: Passaic RI/FS Tissue					То:	Ana	lytical Pe	erspective	s			# LPI	R-AP-MT-B		
	Project Number:		09.58	8.02.31			Attn:	Kim	Mace			Shipping Date: 4/14/2010			
Contact Name: Jennifer Parker					Shipper:	UPS				— Airbill Nu	18E 01 420724S				
	Sampled By: Windward Environmental LLC			Form filled out by:	Jennifer Parker/Dianne Janak			Janak	— Turnarour	nd reque		Standard			
								•							
								Т	est(s) Reque	ested (check t	est(s) required)				
	Sample Collection Date (m/d/y)	Time		San	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)					nments / I	Instructions ımber(s)]
	8/27/2009	07:17		.PR6-CSN	MT-Comp43	1	Tissue	X	X				·		
	8/15/2009	7:00		PR3-CSN	MT-Comp29	1	Tissue	X	X	ļ					
	8/20/2009	12:20		PR5-CSN	MT-Comp36	1	Tissue	Х	Х						
	8/26/2009	11:38	L	.PR7-CSN	MT-Comp47	1	Tissue	Х	Х						
	8/27/2009	08:55		PR7-CSN	MT-Comp51	1	Tissue	X	Х						
	9/9/2009	08:56		PR8-CSN	MT-Comp59	1	Tissue	Χ	Х						
	9/9/2009	08:47	<u> L</u>	PR8-CSN	MT-Comp60	1	Tissue	Х	Х						
	9/10/2009	13:02	L	PR8-CSN	MT-Comp62	1	Tissue	X	X						
	9/1/2009	13:10	L	PR1-CSN	MT-Comp05	1	Tissue	X	X						
	9/3/2009	11:10	<u> </u> L	PR1-CSN	MT-Comp09	1	Tissue	Х	X						
			Tot	tal Num	ber of Containers	10 of 21	Purchase Orde	er / Staten	nent of Wo	rk # AP09_0	D5LPR				
	1) Released by		2/		2) Released by:		3) Released by:			4) Released	by:	1	NOTES		-
	Company:	4/5 10 14 25	_ 400		Company: Date/Time: Rec'd by:		Company: Date/Time: Rec'd by:			Company: Date/Time Rec'd by:		v c c c t	Windward date and ti collected in composite. together in onsite at A	Environme ime corres ndividual s . Specimen nto compo Ipha Analy	were collected by ental. The collection ponds to the earliest specimen within the is were grouped sites by Windward ctical. Alpha Analytical ogenized the

Company:

Date/Time:



Company:

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

To be comp	mpleted by Laboratory upon sample receipt:							
Date of receipt:: 15 Apr 10	Laboratory W.O. #: Palao							
Condition upon receipt: QUOC	Time of receipt: 10:21							
Cooler temperature:	Received by Muscelus							

Company:

Date/Time:

1	of	3
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Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Analytical Perspectives

P2161

#LPR-AP-MT-A

Project Number:	09.58.02.31	A	ttn:	Kin	Mace		Shipping Date: 4/14/2010			
Contact Name:	s	hipper:	UP	S		Airbill Number: 121908601 4207 245				
Sampled By:	Windward Environmental LLC	F	orm filled out by:	Jer	nifer Par	ker/Dianne Janak	Turnaround requested: Standard			
				T	est(s) Reque	ested (check test(s) required	d)			
Sample Collection Date (m/d/y) Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)		Comments / Instructions [Jar tag number(s)]			
8/28/2009 8:50	LPR7-CSMT-Comp52	1	Tissue	X	Х					
9/1/2009 14:04	LPR1-CSMT-Comp08	1	Tissue	Х	Х					
9/2/2009 12:08	LPR1-CSMT-Comp10	1	Tissue	Х	Х					
9/3/2009 12:00	LPR1-CSMT-Comp12	1	Tissue	Х	Х					
9/2/2009 12:26	LPR2-CSMT-Comp16	1	Tissue	Х	Х					
9/17/2009 11:27	LPR6-CSMT-Comp39	1	Tissue	Х	Х					
9/1/2009 11:46	LPR2-CSMT-Comp22	1	Tissue	Х	Х					
9/1/2009 11:07	LPR2-CSMT-Comp23	1	Tissue	Х	Х					
8/27/2009 06:50	LPR6-CSMT-Comp40	1	Tissue	Х	Х					
8/12/2009 09:24	LPR3-CSMT-Comp25	1	Tissue	Х	Х					
	Total Number of Containers	10 of 21	Purchase Orde	er / Statem	ent of Wo	ork # AP09_05LPR				
1) Released by:	2) Released by:		3) Released by:			4) Released by:	NOTES			
Company Styles 1400 Recol by	Kec'd by:		Company: Date/Time: <u>Rec'd by:</u>			Company: Date/Time: Rec'd by:	Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical			
Company: Date/Time:	Company: Date/Time:		Company: Date/Time:			Company: Date/Time:	processed and homogenized the composites; therefore, samples are released by Alpha Analytical.			



Date of receipt:: 15 Apr 10	Laboratory W.O. #: P2/L0/
Condition upon receipt:	Time of receipt: (0:21
Cooler temperature: 2°	Received by Musselwhole

of	3

72161

Project/Client Name:	Passaic	RI/FS Tissue	To:	Ana	lytical Po	erspective	es	# LPR-AP-MT-C Shipping Date: 4/14/2010		
Project Number:	09.58.02.	31	Attn	Attn: Shipper: Form filled out by:		Mace				
Contact Name:	Jennifer F	Parker	Ship			•			Airbill Number:	1219E18E014207245
Sampled By:	Windward	d Environmental LLC	Forn			nifer Park	er/Dianne	Janak	Turnaround rec	uested: Standard
								++(-)ib		
						ĭ .	ested (check	test(s) required)		
					gene	<u>"</u>				
Sample			•		0 (§§	7,50 38)				
Collection Date (m/d/y) T	ime	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			C	omments / Instructions [Jar tag number(s)]
	:13 LPR2-	CSMT-Comp21	1	Tissue	×	Х				par tag namber(5)
										4- A
							<u> </u>			
										**//
	Total N	umber of Containers	1 of 21	Purchase Ord	er / Statem	ent of Wo	ork # AP09_0	D5LPR		
1) Released by:	//	2) Released by:		3) Released by:			4) Released	by:	NOTES	
a Marie	1/_									ual specimens were collected by ard Environmental. The collection
Company:		Company: Date/Time:		Company: Date/Time:			Company:		date an	d time corresponds to the earliest
Rec'd/by:	1400	Rec'd by:		Rec'd by:			Rec'd by:			d individual specimen within the site. Specimens were grouped
UPS				, u bj.			Rec u by:			r into composites by Windward It Alpha Analytical. Alpha Analytical
Company:		Company:		Company:			Company:		process	ed and homogenized the
Date/Time:		Date/Time:		Date/Time:			Date/Time	:		ites; therefore, samples are released a Analytical.



To be compl	eted by Laboratory upon sample receipt:
Date of receipt:: 15 Ape 10	Laboratory W.O. #: P2/6/
Condition upon receipt:	Time of receipt: 10:21
Cooler temperature: 20	Received by Musselwhile

oject/Client Nar	ne: Pa	ssaic RI/FS Tissue		То:	Aı	nalytical	Perspectives	COC reference	# LPR-AP-PI-A
oject Number:	09	.58.02.31		Attn:	Ki	m Mace		Shipping Date:	06/09/2010
ntact Name:	Je	nnifer Parker		Shipper:	UI	PS		Airbill Number:	1219E78E 014361
mpled By:	Wi	ndward Environmental LLC		Form filled out by:	Je	nnifer Pa	arker/Dianne Janak		uested: Standard
	 				T	est(s) Requ	ested (check test(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			
/25/2009	9:54	LPR6-ELFT-Ind001	1	Tissue	X	X			omments / Instructions
/19/2009	9:35	LPR5-MSFT-Comp01	1	Tissue	X	X			[lar tag number(s)]
9/8/2009	10:09	LPR8-MSFT-Ind002	1	Tissue	X	X			
/18/2009	10:35	LPR5-MSFT-Ind009	1	Tissue	X	X			
/18/2009	13:50	LPR4-MDFT-Comp01	1	Tissue	X	Х			
/18/2009	10:35	LPR5-MDFT-Comp02	1	Tissue	Х	Х			
/10/2009	8:40	LPR8-MDFT-Comp03	1	Tissue	X	Х			
/25/2009	9:54	LPR6-ELCT-Ind001	1	Tissue	, X	Х			
/19/2009	9:35	LPR5-MSCT-Comp01	1	Tissue	X	Х			
9/8/2009	10:09	LPR8-MSCT-Ind002	1	Tissue	Х	X			
	1	Total Number of Containers	10	Purchase Orde	er / State	ment of \	Work # AP09_05LPR		
Released by:	1500	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to the Specimens were grouped to Analytical. Alpha Analytical p	earliest collected indivion gether into composites in processed and homogen sed by Alpha Analytical.	avironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha ized the individuals and composites; Sample names indicate whether the

Condition upon receipt: good

Cooler temperature:

Time of receipt: 9:57

Received by: Musselwhite

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

1	of	2

Project/Client Name:

Passaic RI/FS Tissue

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM COPY

#LPR-AP-PI-A

COC reference

Time of receipt:

Analytical Perspectives

				Attn:		m Mace			Shipping Date: 06/09/2010			
Contact Name: Sampled By:			Environmental LLC		Shipper: Form filled out by:		PS ennifer Pa	arker/Dianne Ja	ınak	Airbill Number: 12.19E78E 01.4361 25 Turnaround requested: Standard		
	· /	T				Т	est(s) Requ	ested (check test(s)	required)			
Sample Collection Date (m/d/y)	Time	Sai	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)					
8/25/2009	9:54	LPR6-EL	.FT-Ind001	1	Tissue	Х	Х				Comments / Instructions [lar tag number(s)]	
9/19/2009	9:35	LPR5-M	SFT-Comp01	1	Tissue	Х	Х					
9/8/2009	10:09	LPR8-M	SFT-Ind002	1	Tissue	X	X					
9/18/2009	10:35	LPR5-M	SFT-Ind009	1	Tissue	Х	Х					
9/18/2009	13:50	LPR4-M	DFT-Comp01	1	Tissue	Х	Х					
9/18/2009	10:35	LPR5-M	DFT-Comp02]	Tissue	Х	Х					
9/10/2009	8:40	LPR8-M	DFT-Comp03	1	Tissue	Х	Х					
8/25/2009	9:54	LPR6-EL	.CT-Ind001	1	Tissue	X	Х					
9/19/2009	9:35	LPR5-M	SCT-Comp01	1	Tissue	Х	Х					
9/8/2009	10:09	LPR8-M	SCT-Ind002	1	Tissue	X	X					
	-	Total Num	ber of Containers	10	Purchase Ord	er / State	ment of \	Work # AP09_05	SLPR			
1) Released by: Company: Date/Time: Company: Date/Time:	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresp Specimens were Analytical. Alpha	onds to the earli grouped togethe Analytical proce es are released b	est collected inc er into composit ssed and homo y Alpha Analytic	d Environmental. The collection dividual specimen within the collection es by Windward onsite at Alph genized the individuals and coll al. Sample names indicate who).	omposite. na mposites;		
25 S S S S	(A)	. u D. ' -	010,000					T		1 =		
Simp	(4) CM	Hus	Project 200 West Me	arcar Straat							y upon sample recei	pt:
		_	ZUU VVESLIVIE	בוכפו שנופפנ	Date of r	receipt:: [(نفرک ک	22010	Laborato	ry W.O. #: 🗜	P2333	

Condition upon receipt: qood

Cooler temperature:

To:

Project/Client Na	me: Pa	assaic RI/FS Tissue		То:	_A	nalytical	Perspectiv	es	COC reference	e: # LPR-AP-PI-B	
Project Number:	09	9.58.02.31		Attn: Shipper:		Kim Mace			Shipping Dat	e: <u>06/09/2010</u>	
Contact Name:	Je	ennifer Parker				PS			Airbill Number:	1219E18E 01 4361	
Sampled By:	ampled By: Windward Environmental LLC			Form filled out by:	Jennifer Parker/Dianne Janak				Turnaround requested: Standard		
					т	est(s) Reque	ested (check te	est(s) required)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)					
9/18/2009	10:35	LPR5-MSCT-Ind009	1	Tiss∪e	X	X				Comments / Instructions	
9/18/2009	13:50	LPR4-MDCT-Comp01	1	Tissue	X	X				[lar tag number(s)]	
9/18/2009	10:35	LPR5-MDCT-Comp02	1	Tiss∪e	X	X					
9/10/2009	8:40	LPR8-MDCT-Comp03	1	Tissue	X	X					
.,.,,											
						<u></u>					
		Total Number of Containers	4	Purchase Orde	er / State	ment of V	Nork# AP0	9_05LPR			
1) Released by: Company: Date/Time: Rec'd by:	Company: Date/Time: Date/Time: Date/Time:			and time co Specimens Analytical. A therefore, s	orresponds to the were grouped too Alpha Analytical p amples are release	earliest collected inc ether into composit rocessed and homo	Environmental. The collection date dividual specimen within the composite so by Windward onsite at Alpha penized the individuals and composites al. Sample names indicate whether the b.				
Company: Date/Time:		Company: Date/Time:		Company: Date/Time:							
& Sample	s in y	this project 200 West N	lercer Street				To be ۱ و سر		by Laboratory	upon sample receipt:	

Condition upon receipt: Qood

Cooler temperature:

Time of receipt:

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

1	of	2
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Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Analytical Perspectives

Project Number: Passaic RI/FS Tissue 09.58.02.31				To:	. <u>A</u>	Analytical Perspectives				C referen	ce # LPR-AP-WB-A		
				Attn:	Kim Mace			Shi	Shipping Date: 06/16/2010				
	Contact Name:	J	ennifer Par	ker		Shipper:	UPS			Airt	oill Numb	er: 1219E18E 01 4341	
	Sampled By: Windward Environmental LLC			Form filled out by	: <u>J</u> e	ennifer Par	ker/Diann	ne Janak	Tur	naround	requested: Standard		
		 			I	1						1	
								T	ted (check t	test(s) require	d)	-	
	Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					Comments / Instructions [Jar tag number(s)]
×	8/11/2009	9:25	LPR3-CC\	WB-Ind002	1	Tissue	Х	Х					
X	8/15/2009	8:50	LPR3-CC\	WB-Ind005	1	Tissue	Х	Х					
X	8/19/2009	10:03	LPR5-CC\	WB-Ind011	1	Tissue	Х	Х					
×	8/25/2009	7:30	LPR6-CC\	WB-Ind021	1	Tissue	X	Х			,		
×	8/25/2009	8:43	LPR6-CC\	WB-Ind028	1	Tissue	Х	Х					
×	8/25/2009	11:33	LPR7-CC\	WB-Ind042	1	Tissue	Х	Х					
\star	8/27/2009	9:01	LPR7-CC\	WB-Ind069	1	Tissue	Х	Х					
×	9/12/2009	7:58	LPR8-CC\	WB-Ind139	1	Tissue	X	Х					
\	9/12/2009	10:57	LPR8-CC\	WB-Ind147	1	Tissue	X	Х					
¥	9/18/2009	10:35	LPR5-CC\	WB-Ind160	1	Tissue	X	X					
			Total Num	ber of Containers	10 of 18	Purchase Ord	ler / State	ment of W	ork # APC	09_05LPR			
	1) Released by: Company Deter fine Rec'd by: Company: Date/Time:	16 5	.10	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Specimens Analytical, therefore,	orresponds to t were grouped Alpha Analytica	he earliest co together into Il processed a eased by Alpl	ollected in composi and homo ha Analyti	d Environmental. The collection date dividual specimen within the composite. tes by Windward onsite at Alpha genized the individuals and composites; cal. Sample names indicate whether the a).
S	amples !	in Hi	Jard	200 West Me Suite 401 Seattle, WAS		1 .		7 Len	ه 10	Lal		.0.#: f	y upon sample receipt:

Condition upon receipt:

Cooler temperature:

Tel: (206) 378-1364 Fax: (206) 217-9343 Time of receipt: 10:20

2	of	

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Lissue				Го:	Analytical Perspectives				COC reference: # LPR-AP-WB-B			
Project Number:	_09	.58.02.31			Attn: Shipper:		Kim Mace UPS			Shippi	ing Date	: 06/16/2010
Contact Name:	_Je	nnifer Par	rker							Airbill	Number	: 1 <u>219E18E 01 4341</u> 7
Sampled By: Windward Envir		nvironmental LLC	Form filled out by:		r: <u>J</u> e	ennifer Pa	rker/Dianne	e Janak	Turnar	round re	quested: Standard	
					<u> </u>	Τ				- 		
							T '	sted (check te	est(s) required)			
Sample Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)				,	Comments / Instructions [Jar tag number(s)]
9/18/2009	13:50	LPR4-CC	WB-Ind175	1	Tissue	Х	X					
9/19/2009	12:10	LPR4-CC	WB-Ind186	1	Tissue	Х	X					
8/12/2009	9:27	LPR3-AN	WB-Ind001	1	Tissue	Х	X					
8/28/2009	8:05	LPR6-AN	WB-Ind004	1	Tissue	Х	Х					
9/16/2009	10:08	LPR4-AN	WB-Ind007	1	Tissue	X	X					
8/28/2009	7:24	LPR6-AN	WB-Ind003	1	Tissue	X	X					
8/29/2009	11:01	LPR6-AN	WB-Ind005	1	Tissue	X	X					
8/29/2009	11:44	LPR7-AN	WB-Ind006	1	Tissue	х	Х					
												77 . 76
		Total Num	ber of Containers	8of 18	Purchase Ord	lor / State	ment of W	/ork # APO	0 051 DD			· · · · · · · · · · · · · · · · · · ·
1) Released by:			2) Released by:	001 10	3) Released by:	ier / State	inencor v	NOTES	J_OJEF K			
Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:			Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).						
& Samp	Ros in	- The	project					To be	completed	by Labor	atory	upon sample receipt:
•	/		200 West Me	ercer Street	D-46		~ /	10			" \(\frac{1}{2} \)	1367

Cooler temperature:

Time of receipt: 10:20

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

-	2 0				MIN-OF	-CUSTO						OPY
	Project/Client N			/FS Tissue	<u></u>	То:	_A	nalytical	Perspectives	<u> </u>	COC referer	nce: #LPR-AP-WB-B
	Project Number: 09.58.02.31			Attn:	_Ki	m Mace			Shipping D	ate: 06/16/2010		
	Contact Name: Jennifer Parker			Shipper:	U	PS		****	Airbill Num	ber: 1Z19E18E 01 4341		
	Sampled By: Windward Environmental LLC		····	Form filled out by	: <u>J</u> e	Jennifer Parker/Dianne Janak			Turnaround requested: Standard			
								est(s) Reque	ested (check test(s) required)		
	Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)				Comments / Instructions [Jar tag number(s)]
	9/18/2009	13:50	LPR4-CC	:WB-Ind175	1	Tissue	Х	х				
	9/19/2009	12:10	LPR4-CC	WB-Ind186	1	Tissue	Х	Х				
7	8/12/2009	9:27	LPR3-AN	IWB-Ind001	1	Tissue	Х	Х				
×	8/28/2009	8:05	LPR6-AN	IWB-Ind004	1	Tissue	Х	х				**************************************
×	9/16/2009	10:08	LPR4-AN	IWB-Ind007	1	Tissue	Х	Х				
×	8/28/2009	7:24	LPR6-AN	IWB-Ind003	1	Tissue	Х	Х				W. W. C
×	8/29/2009	11:01	LPR6-AN	IWB-Ind005	1	Tissue	Х	Х				
*	8/29/2009	11:44	LPR7-AN	IWB-Ind006	1	Tissue	Х	х				
			Total Num	nber of Containers	8of 18	Purchase Ord	er / State	ment of W	ork # AP09_0)5LPR		
	1) Released by: Company: Date/Time: Company: Date/Time:	SHA 0 16, 3	-	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corres Specimens were Analytical. Alph therefore, samp	sponds to the ea e grouped toget a Analytical pro- ples are released	rliest collected in ther into composi cessed and homo	d Environmental. The collection date dividual specimen within the composite tes by Windward onsite at Alpha genized the individuals and composites cal. Sample names indicate whether the o).
ا د	4 Sa ~	^ - \	Uh: ^	· iost					To be see	mploted b	. I abouts	v unan cample receipt
	~ sump	\sim	rus f	200 West Me	ercer Street		10	·				y upon sample receipt:
13/160	* Sampl	\sqrt{X}	7ard	Suite 401 Seattle, WA 9			receipt:: ʃ ີ		ne 10	···	ory W.O. #: 🗲	
	V V III I	enviro	nmental L	LC 1el: (206) 3/8	3-1364	i		eipt: Yo			receipt: /C	
Fax: (206) 217-9343				7-9343	Cooler temperature:				Received by: Whusse Du			

CHAIN-OF-CUSTODY/TEST REQUEST FORM of # LPR-AP-CF-A **Analytical Perspectives** COC reference Passaic RI/FS Tissue To: Project/Client Name: 06/16/2010 Kim Mace Shipping Date: 09.58.02.31 Attn: Project Number: Airbill Number: 1219E18E0141415166 **UPS** Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners (1668A) PCDDs/PCDFs (1613B) Sample # of Collection Matrix Date (m/d/y) Time Sample Identification Containers Comments / Instructions **Tissue** Х Х LPR3-CCFT-Ind001 8/11/2009 9:25 (Jar tag number(s)) Χ Х Tissue LPR3-CCFT-Ind004 8:50 8/15/2009 Χ Χ Tissue 8/25/2009 9:54 LPR6-CCFT-Ind032 Х Х Tissue LPR7-CCFT-Ind068 8/27/2009 9:01 Χ Χ Tissue LPR7-CCFT-Ind092 9:32 8/28/2009 Χ Χ LPR6-CCFT-Ind104 Tissue 8/29/2009 8:10 Χ Χ LPR8-CCFT-Ind121 **Tissue** 9/8/2009 7:48 Χ Χ LPR8-CCFT-Ind131 Tissue 9/9/2009 9:15 Χ Х LPR4-CCFT-Ind155 Tissue 10:49 9/17/2009 LPR4-CCFT-ind156 Tissue 9/17/2009 11:05 Purchase Order / Statement of Work # AP09_05LPR 10 of 12 **Total Number of Containers** 3) Released by: 2) Released by: 1) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical, Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by:

Company:

Date/Time:

Win	Ward
W W	environmental LLC

Company:

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

To be comple	eted by Laborator	y upon sample receipt:
Date of receipt:: 1 June 10	Laboratory W.O. #:	2354
Condition upon receipt: 4 GOC	Time of receipt: [(:20
Cooler temperature:	Received by: 47	cusselukte

CHAIN-OF-CUSTODY/TEST REQUEST FORM of 2 **Analytical Perspectives** # LPR-AP-CF-B COC reference: Passaic RI/FS Tissue To: Project/Client Name: 06/16/2010 Kim Mace Shipping Date: 09.58.02.31 Attn: Project Number: 12 19E18E 01 4141 5766 **UPS** Airbill Number: Shipper: Jennifer Parker Contact Name: Turnaround requested: Standard Windward Environmental LLC Jennifer Parker/Dianne Janak Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners PCDDs/PCDFs (16138) Sample Collection # of Sample Identification Containers Matrix Date (m/d/y) Time Comments / Instructions Χ Tissue Χ LPR5-CCFT-Ind181 9/19/2009 11:00 [lar tag number(s)] Χ Х LPR5-CCFT-Ind184 **Tissue** 11:33 9/19/2009 Purchase Order / Statement of Work # AP09_05LPR **Total Number of Containers** 2 of 12 1) Released by: 3) Released by: 2) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt: 200 West Mercer Street



Date of receipt:: 17 June 10	Laboratory W.O. #: +2354	
Condition upon receipt:	Time of receipt: [O :20	
Cooler temperature:	Received by Musselwill	Q

Project/Client Name: Passaic RI/FS Tissue				To: Anal			Perspectives	COC ref ere	ence # LPR-AP-CATF-A		
roject Number:	Ta	ask 16.1 (09.58.02.31)		Attn:	_Ki	m Mace	·	Shipping D			
Contact Name:	Je	ennifer Parker		Shipper:	U	PS		Airbill Num	nber: 1 <u>219E78E014215</u>		
ampled By:	W	indward Environmental LLC		Form filled out by:	Je	nnifer Pa	rker/Dianne Janak	Turnaround	Turnaround requested: Standard		
				T	T	est(s) Requ	ested (check test(s) required)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)					
9/12/2009	9:35	LPR8-WSFT-Ind009	1	Tissue	X	Х			Comments / Instructions [Jar tag number(s)]		
9/12/2009	11:16	LPR8-WSFT-Ind013	1	Tissue	X	Х					
9/15/2009	8:34	LPR5-WSFT-Ind019	1	Tissue	X	X					
9/18/2009	11:57	LPR5-WSFT-Ind020	1	Tissue	Х	X					
9/18/2009	14:10	LPR4-WSFT-Ind023	1	Tissue	Х	X					
8/18/2009	8:15	LPR5-IPFT-Ind001	1	Tissue	X	X					
8/25/2009	7:17	LPR6-IPFT-Ind003	1	Tissue	X	X					
8/26/2009	8:29	LPR6-IPFT-Ind004	1	Tissue	X	X					
8/26/2009	10:18	LPR7-IPFT-Ind005	1	Tissue	X	X					
8/27/2009	9:34	LPR7-IPFT-Ind006	11	Tissue	X	X					
		Total Number of Containers	10 of 35	Purchase Orde	er / State	ment of	Nork # AP09_05LPR R				
1) Released by: Company: Date/Time:			3) Released by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites, therefore, samples are released by Alpha Analytical. Sample names indicate whether the					

Company: Date/Time:

Wind Ward environmental LLC

Company: Date/Time:

> 200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company: Date/Time:

	To be complete	d by Laborator	y upon :	sample receipt:
$\sim \sim 0.0$		horston/WO#:		

Date of receipt:: 9-9 Wg-10	Laboratory W.O. #:	
Condition upon receipt:	Time of receipt:	0:45 Am
Cooler temperature: 🜙 🌓 🐧	Received by	e R. Hudson

1	f <u>4</u>	СНА	IN-OF	-CUSTO	DY/T	EST I	REQUEST FOR	RM	
D : (///: No	Pa	ssaic RI/FS Tissue		To:	A	nalytical I	Perspectives	COC ref erence	# LPR-AP-CATC-A
7 4 40 4 (00 50 00 04)				Attn:		m Mace		Shipping Date:	07/08/2010
Project Number:		nnifer Parker		Shipper:		PS.		Airbill Number:	1219ETBE 014381 0
Contact Name:		indward Environmental LLC		Form filled out by:			rker/Dianne Janak	Turnaround requ	
Sampled By:		III GWALG ERVII ON MORALI. 220							
						est(s) Reque	sted (check test(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			Copy 10 Julio
9/12/2009	9:35	LPR8-WSCT-Ind009	1	Tissue	X	Х			imments / Instructions [lar tag number(s)]
9/12/2009	11:16	LPR8-WSCT-Ind013	1	Tiss∪e	X	X			
9/15/2009	8:34	LPR5-WSCT-Ind019	1	Tissue	X	X			
9/18/2009	11:57	LPR5-WSCT-Ind020	1	Tissue	X	X			
9/18/2009	14:10	LPR4-WSCT-Ind023	1	Tissue	X	X			
8/18/2009	8:15	LPR5-IPCT-Ind001	1	Tissue	X	X			
8/25/2009	7:1 7	LPR6-IPCT-Ind003	1	Tiss∪e	X	·X			
8/26/2009	8:29	LPR6-IPCT-Ind004	1	Tiss∪e	X	X			
8/26/2009	10:18	LPR7-IPCT-Ind005	1	Tiss∪e	X	X			
8/27/2009	9:34	LPR7-IPCT-Ind006	1	Tissue	X	X			
			10 of 35	Purchase Ord	er / State	ment of V	Vork # AP09_05LPR R		
1) Released by: (Company) Date/Tinyle Company: Company: Date/Time:	1610	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Company: Date/Time:			and time corresponds to the ex Specimens were grouped toge Analytical. Alpha Analytical pro	arliest collected indivic ther into composites b cessed and homogen I by Alpha Analytical.	vironmental. The collection date ual specimen within the composite. y Windward onsite at Alpha zed the individuals and composites; ample names indicate whether the



Date/Time:

To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: Q D Wc 10	Laboratory W.O. #:
Condition upon receipt. Good	Time of receipt: 10145 Aw
Cooler temperature: — \	Received by: Manuel Hudon

of	4	CHA	IN-OF	-CUSTO	DY/T	EST	REQUEST FOF	RM	
Project/Client Name: Passaic RI/FS Tissue				To:	A	nalytical	Perspectives	COC ref erence	e # LPR-AP-CATC-A
				Attn:			•	Shipping Date	: 07/08/2010
				Shipper:	U	PS		Airbill Number	r. 1219878E 014381 0
							rker/Dianne Janak	— Turnaround re	
					-	est(s) Reque	ested (check test(s) required)		
Sample follection te (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			
12/2009	9:35	LPR8-WSCT-Ind009	1	Tissue	X	Х			Comments / Instructions [Jar tag number(s)]
12/2009	11:16	LPR8-WSCT-Ind013	1	Tissue	Х	X			
15/2009	8:34	LPR5-WSCT-Ind019	1	Tissue	Х	X			
18/2009	11:57	LPR5-WSCT-Ind020	1	Tissue	X	X			
18/2009	14:10	LPR4-WSCT-Ind023	11	Tissue	X	X			
18/2009	8:15	LPR5-IPCT-Ind001	1	Tissue	X	Х			to anticon to the control of the con
25/2009	7:17	LPR6-IPCT-Ind003	1	Tissue	X	X			75 Y
26/2009	8:29	LPR6-IPCT-Ind004	1	Tiss∪e	X	X			
26/2009	10:18	LPR7-IPCT-Ind005	1	Tissue	X				
27/2009	9:34	LPR7-IPCT-Ind006	1	Tissue	X	X			
		Total Number of Containers	10 of 35	Purchase Ord	ler / State	ment of \	Vork # AP09_05LPR R		
deleased by:	1610	2) Released by: Company: Date/Time: Rec'd by: Company:		3) Released by: Company: Date/Time: Rec'd by: Company:			and time corresponds to the ex- Specimens were grouped toge Analytical. Alpha Analytical pro therefore, samples are released	arliest collected indi- ther into composite cessed and homoge d by Alpha Analytica	vidual specimen within the composite. s by Windward onsite at Alpha enized the individuals and composites; I. Sample names indicate whether the
	Sample collection te (m/d/y) 12/2009 12/2009 12/2009 18/2009	Sample ollection te (m/d/y) Time 12/2009 9:35 12/2009 11:16 15/2009 8:34 18/2009 14:10 18/2009 7:17 12/2009 8:29 12/2009 10:18 12/2009 9:34 10:18 12/2009 9:35 10:18	Passaic RI/FS Tissue Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC	Passaic RI/FS Tissue Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC	Passaic RI/FS Tissue To: Task 16.1 (09.58.02.31) Attn: Shipper: Passaic RI/FS Tissue To: Task 16.1 (09.58.02.31) Attn: Shipper: Passaic RI/FS Tissue To: Task 16.1 (09.58.02.31) Attn: Shipper: Passaic RI/FS Tissue To: Porm filled out by Porm fil	Passaic RI/FS Tissue To: Attn: Kister Task 16.1 (09.58.02.31) Attn: Kister Attn: Kiste	Passaic RI/FS Tissue To: Analytical Kim Mace Task 16.1 (09.58.02.31) Attn: Kim Mace UPS UP	Passaic RI/FS Tissue	Passaic RI/FS Tissue

Wind Ward environmental LLC

To be comple	eted by Laborator	y upon sample receipt:
Date of receipt:: QQWL_10	Laboratory W.O. #;	
Condition upon receipt: Good	Time of receipt:	0:45 Am
Cooler temperature: — \ •	Received by:	ne P Hudon

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue To: **Analytical Perspectives** COC reference: Project/Client Name: Task 16.1 (09.58.02.31) Kim Mace Shipping Date: Project Number:

Attn:

Contact Name:	_Je	nnifer Parker		Shipper:	U	PS		Airbill Numb	er: 1 <u>Z19E014381 010</u>
Sampled By:	<u>Wi</u>	ndward Environmental LLC	d Environmental LLC Form				rker/Dianne Janak	Turnaround	requested: Standard
				Test(s) Requested (check test(s) required)					-
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			
9/9/2009	9:15	LPR8-IPCT-Ind008	1	Tissue	Χ	Х			Comments / Instructions [Jar tag number(s)]
9/9/2009	9:15	LPR8-IPCT-Ind009	1	Tissue	Χ	Х			. 3 (,,,
9/10/2009	13:02	LPR8-IPCT-Ind010	1	Tissue	X	X			
9/10/2009	13:02	LPR8-IPCT-Ind011	1	Tissue	Χ	X			
9/10/2009	13:02	LPR8-IPCT-Ind012	1	Tiss∪e	Х	X			,
9/10/2009	13:02	LPR8-IPCT-Ind013	1	Tiss∪e	Х	X			
8/11/2009	11:08	LPR3-ACCT-Ind001	1	Tissue	Χ	X			
8/11/2009	11:30	LPR3-ACCT-Ind002	1	Tissue	Х	X			
8/13/2009	10:26	LPR3-ACCT-Ind003	1	Tissue	X	X			
8/14/2009	9:04	LPR3-ACCT-Ind005	11	Tissue	X	X			
	1	Total Number of Containers	10 of 35	Purchase Ord	er / State	ment of V	Vork # AP09_05LPR		
1) Released by: Company: Date Fine Rec d by:	Company: Company: Date/Time:			3) Released by: Company: Date/Time: Rec'd by:			and time corresponds to the Specimens were grouped to Analytical. Alpha Analytical p	e earliest collected inc gether into composit processed and homog sed by Alpha Analytic	Environmental. The collection date dividual specimen within the composite es by Windward onsite at Alpha genized the individuals and composites al. Sample names indicate whether the).
Company: Date/Time:				Company: Date/Time:					



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: Q-Q wlg-10	Laboratory W.O. #:
Condition upon receipt: 600D	Time of receipt: 10:45 the
Cooler temperature: —	Received by June 2. Hudson

LPR-AP-CATC-B

07/08/2010

CHAIN-OF-CUSTODY/TEST REQUEST FORM of **#LPR-AP-CATF-B** Passaic RI/FS Tissue **Analytical Perspectives** COC reference: To: Project/Client Name: 07/08/2010 Task 16.1 (09.58.02.31) Kim Mace Shipping Date: Attn: Project Number: 1219018E 014215 6499 **UPS** Airbill Number: Jennifer Parker Shipper: Contact Name: Windward Environmental LLC Turnaround requested: Standard Jennifer Parker/Dianne Janak Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners (1668A) PCDDs/PCDFs (1613B) Sample Collection # of Sample Identification Containers Matrix Date (m/d/y) Time Comments / Instructions Χ Tissue Χ 9:15 LPR8-IPFT-Ind008 9/9/2009 [lar tag number(s)] Χ Χ Tissue 9/9/2009 9:15 LPR8-IPFT-Ind009 Χ Χ Tissue 9/10/2009 13:02 LPR8-IPFT-Ind010 Χ Χ Tissue 9/10/2009 13:02 LPR8-IPFT-Ind011 Χ Χ LPR8-IPFT-Ind012 Tissue 9/10/2009 13:02 Х Χ Tissue 9/10/2009 LPR8-IPFT-Ind013 13:02 Χ Χ LPR3-ACFT-Ind001 Tissue 8/11/2009 11:08 Χ Χ Tissue 11:30 LPR3-ACFT-Ind002 8/11/2009

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Χ

Purchase Order / Statement of Work # AP09_05LPR

1) Released by:

Company: 4 DH

10:26

9:04

Pater time: 10 1335

Company:
Date/Time:

8/13/2009

8/14/2009

2) Released by:

LPR3-ACFT-Ind003

LPR3-ACFT-Ind005

Total Number of Containers

Company:

Rec'd by:

Company: Date/Time: 3) Released by:

Tissue

Tissue

10 of 35

Company:

Date/Time:

Rec'd by:

Company: Date/Time: NOTES

Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).

To be completed by Laboratory upon sample receipt:

Willen	Ward LLC

Pate of receipt:: Q - Guly -10	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 10,45Am
Cooler temperature: 6	Received by: have R Hudson

1 0	f <u>4</u>		CHA	IN-OF	·CUSTO	DY/T	EST	REQUEST	FORM	
Project/Client Na	Project/Client Name: Passaic RI/FS Tissue Task 16.1 (09.58.02.31)			То:	A	nalytical	Perspectives	COC ref erence	# LPR-AP-CATF-A 07/08/2010	
Project Number:				Attn:	Ki	m Mace		Shipping Date:		
Contact Name:		nnifer Par			Shipper:	U	PS		Airbill Number:	1219ETBE 01 4215 6
Sampled By:			nvironmental LLC		orm filled out by:	: <u>J</u> e	ennifer Pa	rker/Dianne Janak	Turnaround req	vested: Standard
		 	7798			Т	est(s) Requ	ested (check test(s) req	uired)	
Sample Collection Date (m/d/y)	Time	Sam	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)			Copy 10 Jul 10
9/12/2009	9:35	LPR8-W	SFT-Ind009	1	Tiss∪e	Х	Х			omments / Instructions [[ar tag number(s)]
9/12/2009	11:16		SFT-Ind013	1	Tissue	Х	Х			
9/15/2009	8:34	4	SFT-Ind019	1	Tiss∪e	X	Х			
9/18/2009	11:57		SFT-Ind020	1	Tissue	Х	X			
9/18/2009	14:10		SFT-Ind023	1	Tissue	Х	X			
8/18/2009	8:15		T-Ind001	1	Tissue	Х	Х			
8/25/2009	7:17	LPR6-IPF	T-Ind003	1	Tissue	X	X			
8/26/2009	8:29	LPR6-IPF	T-Ind004	1	Tissue	X	X			
8/26/2009	10:18	LPR7-IPF	T-Ind005	1	Tissue	X	X			
8/27/2009	9:34	LPR7-IPF	T-Ind006	1	Tissue	X	X			
		Total Num	ber of Containers	10 of 35	Purchase Ord	ier / State	ment of \	<i>Nork </i>	l R	
1) Released by: Company: Rec'd by: Company: Date/Time:	1535 PS		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds Specimens were grou Analytical. Alpha Ana therefore, samples ar	s to the earliest collected individually sped together into composites l lytical processed and homogen	vironmental. The collection date dual specimen within the composite by Windward onsite at Alpha ized the individuals and composites Sample names indicate whether the
<u></u>			I					To be compl	eted by Laboratory ι	pon sample receipt:
Erre restlementer estas de	* /x	·r 1	200 West M Suite 401	ercer Street	Date of	receipt:: (9-9u	λ-10	Laboratory W.O. #:	
Win	C/W	/ard	Seattle, WA LC Tel: (206) 37	8-1364	Conditi	on upon re)O)	Time of receipt:	45 Am
	- CHAILO		Fav: (206) 21	17-9343	Cooler	tomporatur	a:	0	Received by to 6 - + A	

Cooler temperature:

Tel: (206) 378-1364 Fax: (206) 217-9343

2 0	f <u>2</u>		CHA	IN-OF	-CUSTO	DY/T	EST	REQUEST F	ORM	
Project/Client Name: Passaic RI/FS Tissue Project Number: Task 16.1 (09.58.02.31) Contact Name: Jennifer Parker			To: Analytical Perspe			Perspectives	COC reference:	# LPR-AP-CATC-B		
			Attn:	Ki	m Mace		Shipping Date:	07/08/2010		
			Shipper:	U	PS		Airbill Number:	12198014381 010		
Sampled By:	W	/indward E	nvironmental LLC		Form filled out by	r. Je	ennifer Pa	arker/Dianne Janak	Turnaround req	
						Т	est(s) Requ	ested (check test(s) require	ed)	0- 1
Sample Collection Date (m/d/y)	Time	Sam	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			10 Jel 10
9/9/2009	9:15	LPR8-IPC	CT-Ind008	1	Tissue	Х	Х			flar tag number(s)]
9/9/2009	9:15	_	CT-Ind009	1	Tiss∪e	X	X			
9/10/2009	13:02		CT-Ind010	1	Tissue	X	X			
9/10/2009	13:02	LPR8-IPC	CT-Ind011	1	Tissue	- X	Х			
9/10/2009	13:02	LPR8-IPC	CT-Ind012	1	Tissue	Х	X			
9/10/2009	13:02	LPR8-IPC	CT-Ind013	1	Tissue	X	Х			
8/11/2009	11:08	LPR3-AC	CCT-Ind001	1	Tissue	X	X			
8/11/2009	11:30	LPR3-AC	CCT-Ind002	1	Tissue	X	X			
8/13/2009	10:26	LPR3-AC	CCT-Ind003	1	Tissue	, X	X			
8/14/2009	9:04	LPR3-AC	CCT-Ind005	1	Tissue	X	X			
		Total Numi	ber of Containers	10 of 35	Purchase Orc	ler / State	ment of V	Nork # AP09_05LPR		
Company: Company: Date/Time:	14A 0 161	6	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were grouped Analytical. Alpha Analytic	the earliest collected individ I together into composites l al processed and homogen leased by Alpha Analytical.	nvironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha ized the individuals and composites; Sample names indicate whether the
L			****	<u>, , , , , , , , , , , , , , , , , , , </u>				To be complete	ed by Laboratory u	pon sample receipt:
eritori suntattico di faccio suntattico di co			200 West M Suite 401	ercer Street	Date of	receipt::	Q - Q	W4-10 14	aboratory W.O. #:	
						15 1m				

Cooler temperature:

Tel: (206) 378-1364 Fax: (206) 217-9343

3 o	f <u>4</u>	CHA	IN-OF	-CUSTO	DY/1	EST	REQUEST FOR	RM	
Project/Client Name: Passaic RI/FS Tissue				То:	A	nalytical	Perspectives	COC reference	# LPR-AP-CATC-C
Project Number:		ask 16.1 (09.58.02.31)		Attn:	Ki	m Mace		Shipping Date	: 07/08/2010
Contact Name:		ennifer Parker	·	Shipper:	U	 PS		Airbill Number	15
Sampled By:	V	/indward Environmental LLC		Form filled out by	: <u>J</u> e	ennifer Pa	rker/Dianne Janak	Turnaround re	equested: Standard
	-				Т	est(s) Reque	ested (check test(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)	, C		
8/19/2009	10:51	LPR5-ACCT-Ind006	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]
8/25/2009	8:25	LPR6-ACCT-Ind008	1	Tissue	Х	Х			
8/25/2009	8:25	LPR6-ACCT-Ind009	1	Tiss∪e	X	X			
8/26/2009	7:55	LPR6-ACCT-Ind010	1	Tissue	X	X			
8/27/2009	7:27	LPR6-ACCT-Ind013	1	Tissue	X	X			
8/27/2009	9:48	LPR7-ACCT-Ind014	1	Tissue	X	X			
8/29/2009	11:11	LPR6-ACCT-Ind016	1	Tissue	X	X			
8/29/2009	12:06	LPR7-ACCT-Ind017	1	Tissue	X	X			
9/2/2009	14:13	LPR2-ACCT-ind018	1	Tissue	X	X			
9/8/2009	8:04	LPR8-ACCT-Ind019	1	Tissue	Х	X			
		Total Number of Containers	10of 35	Purchase Ord	ler / State	ment of V	Vork # AP09_05LPR		
1) Released by: Copppany Date/Tyne: Rec/d by:	1610	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			and time corresponds to the ea Specimens were grouped toget Analytical. Alpha Analytical pro-	rliest collected indix her into composites cessed and homoge by Alpha Analytical	Environmental. The collection date vidual specimen within the composite, by Windward onsite at Alpha enized the individuals and composites, . Sample names indicate whether the

Company: Date/Time:

Ward Ward environmental LLC

Company: Date/Time:

> 200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company: Date/Time:

ro de compre	eted by Laboratory upon Sample receipt.
Pate of receipt:: 9- July-10	Laboratory W.O. #:
ondition upon receipt:	Time of receipt: 10,45 Am
ooler temperature: — [•	Received by: here R-Hhasan

2 of	f <u>2</u>	CHA	IN-OF-	CUSTO	DY/T	EST I	REQUEST F	ORM	
Project/Client Na	me: Pa	ssaic RI/FS Tissue	٦	Го:	. Ai	nalytical	Perspectives	COC reference:	# LPR-AP-CATF-B
Project Number:		sk 16.1 (09.58.02.31)		Ki	m Mace		Shipping Date:	07/08/2010	
Contact Name:		nnifer Parker		Shipper:	U	PS		Airbill Number.	1219018E 014215
Sampled By: Windward Environmental LLC				Form filled out by:	t by: Jennifer Parker/Dianne Janak			Turnaround req	
					Т	est(s) Reque	ested (check test(s) require	ed)	78.50
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs. (16138)			C017 10
9/9/2009	9:15	LPR8-IPFT-Ind008	1	Tissue	Х	Х			Ilar tag number(s)]
9/9/2009	9:15	LPR8-IPFT-Ind009	1	Tissue	Х	Х			
9/10/2009	13:02	LPR8-IPFT-Ind010	1	Tissue	Х	Х			
9/10/2009	13:02	LPR8-IPFT-Ind011	1	Tissue	X	X			
9/10/2009	13:02	LPR8-IPFT-Ind012	1	Tissue	X	X			
9/10/2009	13:02	LPR8-IPFT-Ind013	1	Tissue	X	X			
8/11/2009	11:08	LPR3-ACFT-Ind001	1	Tissue	X	X			
8/11/2009	11:30	LPR3-ACFT-Ind002	1	Tissue	. X	X			
8/13/2009	10:26	LPR3-ACFT-Ind003]1	Tissue	X	X			
8/14/2009	9:04	LPR3-ACFT-Ind005	1	Tissue	X	X			
		Total Number of Containers	10 of 35	Purchase Ord	er / State	ment of V	Vork # AP09_05LPR		
1) Released by Company: Date Time: Company: Date/Time:	1335 1335	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were grouped Analytical. Alpha Analytic therefore, samples are re	the earliest collected indivi- d together into composites al processed and homogen	nvironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha ized the individuals and composites; Sample names indicate whether the
<u> </u>							To be complete	ed by Laboratory	pon sample receipt:
		200 West M 7 1 Suite 401	ercer Street	Date of	receipt::	q - ψ	. Projekte a teromini podaći ug	aboratory W.O. #:	
Win	Senviro	Seattle, WA Tel: (206) 37	78-1364	Condition	on upon re	eipt: (S	W D	ime of receipt:	14CA

Cooler temperature: __

Fax: (206) 217-9343

Received by: Market R. Hudson

3 of	f <u>4</u>	CHA	IN-OF-	CUSTO	DY/T	EST F	REQUEST F	ORM	
Project/Client Name: Passaic RI/FS		ssaic RI/FS Tissue	-	Го:	A	nalytical l	Perspectives	COC reference:	# LPR-AP-CATF-C
Project Number: Task 16.1 (09.58.02.31) Contact Name: Jennifer Parker			Attn:		Ki	m Mace		Shipping Date:	07/08/2010
				Shipper:	UI	PS		Airbill Number:	12 19E18E01421564
Sampled By:	W	indward Environmental LLC		orm filled out by:	Je	nnifer Pa	ker/Dianne Janak	Turnaround rec	uested: Standard
		1	T	<u> </u>	 	*/*) D	the distance to action or assistance		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (5)259 (16138)	sted (check test(s) require		CALL 10
8/19/2009	10:51	LPR5-ACFT-Ind006	1	Tiss∪e	Х	X			omments / Instructions [Jar tag number(s)]
8/25/2009	8:25	LPR6-ACFT-Ind008	1	Tissue	X	X			
8/25/2009	8:25	LPR6-ACFT-Ind009	1	Tissue	X	X	ļ		
8/26/2009	7:55_	LPR6-ACFT-Ind010	1	Tissue	X	X			-
8/27/2009	7:27	LPR6-ACFT-Ind013	1	Tissue	X	X			
8/27/2009	9:48	LPR7-ACFT-Ind014	1	Tissue	X	X			
8/29/2009	11:11	LPR6-ACFT-Ind016]	Tissue	X	X			
8/29/2009	12:06	LPR7-ACFT-Ind017	1	Tissue	X	X			
9/2/2009	14:13	LPR2-ACFT-Ind018	11	Tissue	X	X			
9/8/2009	8:04	LPR8-ACFT-Ind019	1	Tissue	. Х	X			
		Total Number of Containers	10of 35	Purchase Ord	er / State	ment of W	/ork # AP09_05LPR		
1) Released by: Gompany, Date/Time: Company: Date/Time:	153.	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were groupe Analytical. Alpha Analyti therefore, samples are re	the earliest collected individed to the composites call processed and homoger	nvironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha nized the individuals and composites; sample names indicate whether the
L						.**	To be complet	ed by Laboratory	upon sample receipt:
		200 West M Suite 401	ercer Street	Date of	receipt:	9-94	TANK BELIEVE BERKER BESTER	aboratory W.O. #:	
Win	Senviror	Seattle, WA Tel: (206) 37	8-1364	Condition	n upon red	eipt: <table-cell></table-cell>	T GO	ime of receipt: [D]	45 Am.

Cooler temperature:

Fax: (206) 217-9343

Received by her se R. Hhdoon

3 of	f <u>4</u>	CHA	IN-OF-	CUSTO	DY/T	EST	REQUEST F	ORM	
Project/Client Na	me:	Passaic RI/FS Tissue	7	Го:	Aı	nalytical	Perspectives	COC reference:	# LPR-AP-CATC-C
Project Number:	_	Task 16.1 (09.58.02.31)		Ki	m Mace		Shipping Date:	07/08/2010	
Contact Name:	_	Jennifer Parker		Shipper:	UI	 -\$		Airbill Number:	1219E18E01 43810109
		Windward Environmental LLC	Form filled out by		. Je	nnifer Pa	rker/Dianne Janak	Turnaround req	
	÷ 4				Т	est(s) Reque	ested (check test(s) require	d)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)			12 Jul 1°
8/19/2009	10:51	LPR5-ACCT-Ind006	1	Tissue	Х	X			omments / Instructions [Jar tag number(s)]
8/25/2009	8:25	LPR6-ACCT-Ind008	1	Tissue	, X	X			
8/25/2009	8:25	LPR6-ACCT-Ind009	1	Tissue	Х	X			
8/26/2009	7:55	LPR6-ACCT-Ind010	1	Tissue	Х	X			
8/27/2009	7:27	LPR6-ACCT-Ind013	1	Tissue	X	X			
8/27/2009	9:48	LPR7-ACCT-Ind014	1	Tissue	X	X			
8/29/2009	11:11	LPR6-ACCT-Ind016	1	Tissue	X	X			
8/29/2009	12:06	LPR7-ACCT-Ind017	1	Tissue	X	X			
9/2/2009	14:13		1	Tissue	X	X			
9/8/2009	8:04	LPR8-ACCT-Ind019	1	Tissue	X	X			
		Total Number of Containers	10of 35	Purchase Ord	ier / State	ment of V	Nork # AP09_05LPR		
Company: Date/Time: Company: Date/Time:	1610	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were grouped Analytical. Alpha Analytic	the earliest collected indivic I together into composites ball al processed and homogeni leased by Alpha Analytical. S	vironmental. The collection date that specimen within the composite. It will will will will will be a supposite at Alpha and the individuals and composites; ample names indicate whether the
					, ea.		To be complete	ed by Laboratory u	pon sample receipt:
	<u></u>	200 West M	ercer Street	Date of	receipt::	9-Yu		aboratory W.O. #:	
Win	Senvir	Vard Seattle, WA Tel: (206) 37	8-1364	Conditi	on upon rec	eipt: 🔾	π Goo	me of receipt: 105	45**

Cooler temperature: —

Fax: (206) 217-9343

Received by here R. Hasan

CHAIN-OF-CUSTODY/TEST REQUEST FORM # LPR-AP-CATC-D **Analytical Perspectives** COC reference: Passaic RI/FS Tissue To: Project/Client Name: 07/08/2010 Kim Mace Shipping Date: Task 16.1 (09.58.02.31) Attn: Project Number: 1219E18E014381 019 **UPS** Airbill Number: Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners (1668A) PCDDs/PCDFs (16138) Sample # of Collection Matrix Sample Identification Containers Date (m/d/y) Time Comments / Instructions Χ Χ Tissue 9/8/2009 8:44 LPR8-ACCT-Ind020 [lar tag number(s)] Χ Χ Tissue LPR8-ACCT-Ind021 9/8/2009 8:44 Χ Χ Tissue LPR8-ACCT-Ind022 9/10/2009 13:02 Χ 1 Χ Tissue LPR4-ACCT-Ind023 9/17/2009 11:05 Χ 1 Χ Tissue LPR5-ACCT-Ind024 9/18/2009 11:15 Purchase Order / Statement of Work # AP09_05LPR 5 of 35 **Total Number of Containers** 3) Released by: 2) Released by: 1) Released by Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Ward Ward environmental LLC

Date of receipt:: Q-Jule -10	Laboratory W.O. #:
Condition upon receipt: Good	Time of receipt: 10:45 hw
Cooler temperature: — [Received by: have R. Hudson

CHAIN-OF-CUSTODY/TEST REQUEST FORM of # LPR-AP-CATF-C **Analytical Perspectives** COC reference: Passaic RI/FS Tissue To: Project/Client Name: 07/08/2010 Kim Mace Shipping Date: Task 16.1 (09.58.02.31) Attn: Project Number: **UPS** Airbill Number: 12 19ET8E0142156499 Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners PCDDs/PCDFs (1613B) Sample # of Collection Sample Identification Containers Matrix Date (m/d/y) Time Comments / Instructions Χ Χ Tissue LPR5-ACFT-Ind006 10:51 [lar tag number(s)] 8/19/2009 Х Χ 1 Tissue 8/25/2009 8:25 LPR6-ACFT-Ind008 Х Χ Tissue LPR6-ACFT-Ind009 8/25/2009 8:25 Х Χ Tissue LPR6-ACFT-Ind010 8/26/2009 7:55 Χ Χ Tissue LPR6-ACFT-Ind013 8/27/2009 7:27 Х Χ Tissue 8/27/2009 9:48 LPR7-ACFT-Ind014 Χ Χ Tissue LPR6-ACFT-Ind016 8/29/2009 11:11 Χ Χ Tissue LPR7-ACFT-Ind017 8/29/2009 12:06 Χ Tissue Χ LPR2-ACFT-Ind018 9/2/2009 14:13 Χ Tissue Χ LPR8-ACFT-Ind019 9/8/2009 8:04 Purchase Order / Statement of Work # AP09_05LPR **Total Number of Containers** 10of 35 3) Released by: NOTES 2) Released by: 1) Releases Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical, Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by:

Company:

Date/Time:

Wind Ward environmental LLC

Company:

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

Date of receipt:: Q_Q	6-10 L	aboratory W.O. #:	
Condition upon receipt:	Control of the second control of the second	ime of receipt:	145 Am
Cooler temperature: —		\sim \sim \sim	e R. Hudson

To be completed by Laboratory upon sample receipt:

CHAIN-OF-CUSTODY/TEST REQUEST FORM of # LPR-AP-CATF-D **Analytical Perspectives** COC reference: Passaic RI/FS Tissue To: Project/Client Name: 07/08/2010 Shipping Date: Kim Mace Task 16.1 (09.58.02.31) Attn: Project Number: 1<u>Z19E18E 01 4215 6499</u> **UPS** Airbill Number: Shipper: Jennifer Parker Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners PCDDs/PCDFs (1613B) Sample # of Collection Sample Identification Matrix Containers Date (m/d/y) Time Comments / Instructions Χ Χ Tissue LPR8-ACFT-Ind020 (lar tag number(s)) 9/8/2009 8:44 Χ Χ Tissue LPR8-ACFT-Ind021 9/8/2009 8:44 Χ Х **Tissue** 1 LPR8-ACFT-Ind022 9/10/2009 13:02 Χ Χ Tissue LPR4-ACFT-Ind023 9/17/2009 11:05 Χ Χ Tissue LPR5-ACFT-Ind024 9/18/2009 11:15 Purchase Order / Statement of Work # AP09_05LPR 5 of 35 **Total Number of Containers** 3) Released by: 2) Released by: 1) Released Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:



Date of receipt:: 9-July-10	Laboratory W.O. #:
Date of receipt: Q_Quby_10 Condition upon receipt: GOOD	Time of receipt: LD: 45 Am-
	Received by hanne R. Hadoan

1	of	2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	Passaic RI	/FS Tissue		То:	_ <u>A</u> ı	nalytical F	Perspecti	ves	COC ref erence # LPR-AP-PERF-A				
Project Number:		Task 16.1 (09.58.02.31)		Attn:	Ki	Kim Mace				Shipping Date: <u>07/13/2010</u>		
Contact Name: Jennifer Parker				Shipper:		PS			Airbill Nu	imber: 1 <u>Z 19E18E 01 4149</u>			
Sampled By:		Windward E	Environmental LLC		Form filled out by	r: <u>J</u> e	nnifer Par	ker/Dianr	ne Janak	Turnarou	nd requested: Standard		
	20. v			T	<u> </u>								
							1	sted (check 1	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sai	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)						
8/11/2009	9:56	LPR3-M	AFT-Comp02	1	Tissue	Х	Х				Comments / Instructions [lar tag number(s)]		
8/11/2009	10:08		AFT-Comp03	1	Tissue	Х	Х				two mg / mananty /		
8/12/2009	9:24		AFT-Comp04	1	Tissue	Х	Х						
8/13/2009	10:00	LPR3-M	AFT-Comp05	1	Tissue	Х	Х						
8/13/2009	11:52	LPR3-M	IAFT-Comp07	1	Tissue	Х	Х						
8/13/2009	11:52	LPR3-M	IAFT-Comp08	1	Tissue	X	X						
8/14/2009	8:44	LPR3-M	IAFT-Comp13	1	Tissue	X	X						
8/25/2009	7:30	LPR6-M	IAFT-Comp24	1	Tissue	X	X		ļ				
8/25/2009	9:54	LPR6-M	IAFT-Ind122	1	Tissue	Х	X						
9/1/2009	13:10	LPR1-M	IAFT-Comp01	1	Tissue	X	X	<u> </u>	<u> </u>				
		Total Nun	nber of Containers	10 of 19	Purchase Order / Statement of Work # AP09_05LPR R								
2) Released by: Company: Date/Time: Date/Time: Company: Company: Company: Date/Time: Date/Time: Date/Time:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Speciment Analytical, therefore,	corresponds to the s were grouped tog . Alpha Analytical pr	earliest collected ether into comp ocessed and ho ed by Alpha Ana	ward Environmental. The collection date d individual specimen within the composite posites by Windward onsite at Alpha imogenized the individuals and composites plytical. Sample names indicate whether the omp).			
x sample	-iw	This P.	roject					To be	completed	by Laborat	ory upon sample receipt:		
* Sample	- /-	, ' 	200 West M Suite 401	ercer Street	Date of	receipt:: إل	1 Jul	10	Labor	atory W.O. #:	P2426		

Condition upon receipt: QOOD

Cooler temperature:

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM of 2 Passaic RI/FS Tissue **Analytical Perspectives** COC reference: # LPR-AP-PERF-B To: Project/Client Name: Kim Mace 07/13/2010 Task 16.1 (09.58.02.31) Shipping Date: Attn: Project Number: 1<u>Z19E18E 01 4149 9791</u> **UPS** Airbill Number: Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Jennifer Parker/Dianne Janak Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners PCDDs/PCDFs (1613B) (1668A)Sample # of Collection Matrix Date (m/d/y) Time Sample Identification Containers Comments / Instructions Χ Χ 9/10/2009 Tissue 8:38 LPR8-MAFT-Comp26 [Jar tag number(s)] Χ Tissue Χ LPR8-MAFT-Comp31 9/10/2009 9:30 Х Χ Tissue 9/12/2009 9:35 LPR8-MAFT-Comp27 Х Χ LPR5-MAFT-Comp20 Tissue 9/18/2009 10:35 Χ Χ Tissue 9/18/2009 10:35 LPR5-MAFT-Comp21 Χ Tissue Χ LPR5-MAFT-Comp22 9/18/2009 11:57 Χ Χ LPR4-MAFT-Comp16 Tissue 9/18/2009 13:50 Χ Χ LPR4-MAFT-Comp17 Tissue 9/18/2009 14:10 Х Х Tissue 15:46 LPR1-MAFT-Ind145 9/2/2009 9 of 19 Purchase Order / Statement of Work # AP09_05LPR **Total Number of Containers** 3) Released by: 1) Released by: 2) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Wind Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

	<u>y</u>	
Date of receipt:: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Laboratory W.O. #:	2427
Condition upon receipt: 900D	Time of receipt: 🔾 📜	19 AM _
Cooler temperature: 💄 🗸 🖰	Received by:	usselukite

1 of 2	
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Project/Client Name:

Project Number:

Passaic RI/FS Tissue

Task 16.1 (09.58.02.31)

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Kim Mace

To:

Attn:

Analytical Perspectives

COC ref erence

Shipping Date:

Time of receipt: Q

LPR-AP-PERWB-A

07/13/2010

Sampled By:	14/			Shipper: UPS						Airc	ill Num	ber: 1 <u>Z19<i>E18E 01 4149</i> 979</u>
	VVI	ndward E	nvironmental LLC	<u> </u>	Form filled out by:	Je	Jennifer Parker/Dianne Janak Tu				naround	requested: Standard
						Ţ	est(s) Reque	ested (check t	est(s) require	ed)		
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
9/2/2009	15:46	LPR1-M	ACT-Ind145	1	Tissue	Х	X					Comments / Instructions [Jar tag number(s)]
8/11/2009	7:21	LPR3-M.	AWB-Comp06	1	Tissue	X	X					
8/13/2009	11:52	LPR3-M.	AWB-Comp09	1	Tissue	X	X					
8/13/2009	11:52	LPR3-M.	AWB-Comp10	1	Tissue	X	Х				.	
8/13/2009	11:52	LPR3-MAWB-Comp11		1	Tissue	Х	X					
8/13/2009	11:52	LPR3-MAWB-Comp12		1	Tissue	X	Х					
8/13/2009	11:52	LPR3-M	AWB-Comp30	1	Tissue	X	Х					
8/25/2009	11:09	LPR7-M	AWB-Ind123	1	Tissue	X	Х					
8/26/2009	10:37	LPR7-M	AWB-Comp25	1	Tissue	Х	X					
8/27/2009	6:56	LPR6-M	AWB-Ind128	1	Tissue	Χ	Х					
	Т	otal Num	ber of Containers	10 of 20	Purchase Orde	er / State	ment of V	Vork # AP0	9_05LPR R		-	
1) Released by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Specimens Analytical, therefore,	orresponds to were grouped Alpha Analytic	the earliest co I together into al processed a leased by Alph	llected in composi and homo a Analyti	d Environmental. The collection date dividual specimen within the composite. tes by Windward onsite at Alpha genized the individuals and composites; cal. Sample names indicate whether the b).
Sample	المرسمة و	nis f	200 West Me	rcer Street		acaiat:	1-Ju	P. U. 224. 2				y upon sample receipt:

Condition upon receipt:

Cooler temperature: - U O

2 of 2

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343 **Analytical Perspectives**

LPR-AP-PERWB-B

COC reference:

Time of receipt:

Received by:

Project Number:	Та	sk 16.1 (09.58.02.31)		Attn:	Ki	m Mace		Shipping Date: 07/13/2010		
Contact Name:	Je	nnifer Parker	<u> </u>	Shipper:	UPS			Airbill Number: 1Z19E78E01414		
Sampled By:	W	indward Environmental LLC		Form filled out by: Jennifer P			rker/Dianne Janak	Turnar	round requested: Standard	
			i.			est(s) Reque	ested (check test(s) required))		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)				
9/1/2009	12:59	LPR1-MAWB-Ind138	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]	
9/4/2009	11:25	LPR2-MAWB-Ind158	1	Tissue	Х	Х			tim mg	
9/7/2009	13:15	LPR8-MAWB-Comp32	1	Tissue	Х	Х				
9/12/2009	9:35	LPR8-MAWB-Comp28	1	Tissue	Х	Х				
9/12/2009	9:35	LPR8-MAWB-Comp29	1	Tissue	Х	Х				
9/15/2009	9:23	LPR4-MAWB-Comp14	1	Tissue	X	Х				
9/17/2009	9:52	LPR5-MAWB-Comp19	1	Tissue	X	X				
9/17/2009	10:04	LPR5-MAWB-Comp18	1	Tissue	Х	Х				
9/18/2009	11:57	LPR5-MAWB-Comp23	1	Tissue	X	X				
9/18/2009	13:19	LPR4-MAWB-Comp15	1	Tissue	X	X				
	•	Total Number of Containers	10 of 20	Purchase Ord	der / State	ment of V	Nork # AP09_05LPR			
1) Released by: Company: Dater Time Company: Date/Time:	5 HA 0 1518	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to th Specimens were grouped to Analytical. Alpha Analytical	e earliest colle ogether into co processed and ased by Alpha	findward Environmental. The collection date ected individual specimen within the composite. omposites by Windward onsite at Alpha d homogenized the individuals and composites; Analytical. Sample names indicate whether the e (Comp).	
X 5~ -	00-	This DID rect		_			To be completed	l by Labor	ratory upon sample receipt:	
20 miles		This project 200 West M Suite 401	lercer Street	Date of	receipt:; 🕻 (لىن با	Lab.	oratory W.O	*P2429	

Condition upon receipt:

Cooler temperature:

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	Project/Client Name: Passaic RI/FS Tissue					То:	_A	nalytical	Perspectives		COC ref e	erence # LPR-AP-EELF-A		
	Project Number:	Ta	ask 16.1 (0	9.58.02.31)		Attn:	K	m Mace		Shipping Date: 07/20/2010				
	Contact Name:	Je	nnifer Par	ker		Shipper:	PS			mber: 12 19 E 18 E 0 1 4375				
	Sampled By:	W	indward E	nvironmental LLC		Form filled out by	: <u>J</u> e	ennifer Pa	rker/Dianne Ja	ınak				
ĺ							Ţ	est(s) Reque	ested (check test(s)	required)				
	Sample Collection Date (m/d/y)	Time	Sam	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)						
×	8/11/2009			1	Tissue	X.	Х				Comments / Instructions [Jar tag number(s)]			
4	8/11/2009	8:50		T-Comp06	1	Tissue	х	Х				pactay number(s);		
K	8/11/2009	9:13		T-Ind005	1	Tissue	Х	Х						
`*	8/11/2009	11:08	+	T-Comp05	1	Tissue	Х	Х						
K	8/12/2009	9:00		T-Ind010	1	Tissue	х	Х						
بو		12:28	LPR3-ARF	T-Ind014	1	Tissue	Х	Х						
4	8/18/2009	8:05	-	T-Comp09	1	Tissue	х	х						
۲-	8/18/2009	8:15		T-Ind021	1	Tissue	Х	Х						
ہ ۔	8/18/2009	8:42	LPR4-ARF	T-Ind022	1	Tissue	Х	Х						
لإ	8/18/2009	12:30	LPR4-ARF	T-Ind026	1	Tissue	Х	Х						
				ber of Containers	10 of 32	Purchase Or	ler / State	ment of V	Vork # AP09_05	LPR R	•			
	1) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresp Specimens were Analytical. Alpha therefore, sampl	oonds to the grouped too Analytical p es are releas	earliest collected gether into comp processed and ho	ward Environmental. The collection date d individual specimen within the composit posites by Windward onsite at Alpha mogenized the individuals and composite lytical. Sample names indicate whether th omp).		
į	¥ °	2 - 1000	y in	his paner	}				To be cor	npleted	by Laborat	ory upon sample receipt:		
		1	· - 1	200 West Me Suite 401 Seattle, WA	ercer Street	Date of	Date of receipt:: 21			to the second	ratory W.O. #:			
	Win	enviro		Seattle, WA S	98119 8-1364	C. TOWNSON		eipt: 3 00	والمراجع والمتاري والمناصل والمتاريخ والمتاريخ والمتارك والمتارك والمتارك والمتارك والمتارك والمتارك والمتارك	Time	of receipt: (0:21		
		enviroi	imentai =	Fax: (206) 21		Cooler	temperatur	: -4		Rece	ived by: 🎧	Ausselwhite		

CHAIN-OF-CUSTODY/TEST REQUEST FORM of **Analytical Perspectives** COC reference: # LPR-AP-EELF-B Passaic RI/FS Tissue To: Project/Client Name: Shipping Date: 07/20/2010 Kim Mace Task 16.1 (09.58.02.31) Attn: Project Number: 1219ET8E 01 4375 2682 **UPS** Airbill Number: Jennifer Parker Shipper: Contact Name: Jennifer Parker/Dianne Janak Turnaround requested: Standard Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners (1668A) PCDDs/PCDFs (1613B) Sample # of Collection Sample Identification Containers Matrix Time Date (m/d/y) Comments / Instructions Х Х Tissue LPR5-ARFT-Comp12 8/19/2009 10:43 [lar tag number(s)] Х Х 1 Tissue 8/19/2009 10:51 LPR5-ARFT-Ind030 Х Х 1 Tissue LPR4-ARFT-Comp07 8/19/2009 12:44 1 Χ Х Tissue LPR4-ARFT-Ind034 12:44 8/19/2009 Х 1 Tissue Х LPR5-ARFT-Comp10 8/20/2009 11:59 1 Tissue Х Χ LPR5-ARFT-Ind040 8/20/2009 12:25 Х 1 Tissue Х 8/20/2009 13:39 LPR4-ARFT-Comp08 Х Х 1 Tissue LPR4-ARFT-Ind044 8/20/2009 14:42 Х Х 1 Tissue 8/21/2009 11:56 LPR5-ARFT-Ind049 1 Tissue LPR5-ARFT-Ind048 8/21/2009 12:09 10 of 32 Purchase Order / Statement of Work # AP09_05LPR **Total Number of Containers** NOTES 3) Released by: 1) Released by: 2) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: *Samples in this Project
200 West Mercer Street
Suite 401 To be completed by Laboratory upon sample receipt:

Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Pate of receipt:: 21 Jul 10	Laboratory W.O. #: P2447
Condition upon receipt: 900d	Time of receipt: 10:21
Control of the contro	Received by POUL ME A DET

_	2 0	f <u>4</u>	_ CHA	AIN-OF	-CUSTO	DY/T	EST	REQUEST FO	RCO)	PV
	Project/Client Na	ıme: Pa	ssaic RI/FS Tissue		То:	A	nalytical	Perspectives	COC reference:	# LPR-AP-EELF-B
	Project Number:	Ta	sk 16.1 (09.58.02.31)		Attn:	Ki	m Mace		Shipping Date:	07/20/2010
	Contact Name:	Je	nnifer Parker		Shipper:	U	PS		Airbill Number:	1219E 18E 01 4375
:	Sampled By:	Wi	indward Environmental LLC		Form filled out by:	J€	nnifer Pa	rker/Dianne Janak	Turnaround requ	uested: Standard
						Т	est(s) Reque	ested (check test(s) required)		
	Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)			
4	8/19/2009	10:43	LPR5-ARPT-COMP12	1	Tissue	Х	х			omments / Instructions Ular tag number(s))
4	· 8/1 9/2009	10:51	LPR5-ARFT Ind030	h 1	Tissue	Х	Х			
H	8/19/2009	12:44	LPR4-ARFT-Comp07	1	Tissue	Х	Х			
	8/19/2009	12:44	LPR4-ARFT-Ind034	1	Tissue	Х	Х			
	8/20/2009	11:59	LPR5-ARFT-Comp10	11	Tissue	Х	х			
-	8/20/2009	12:25	LPR5-ARFT-Ind040	1	Tissue	Х	Х			
-	8/20/2009	13:39	LPR4-ARFT-Comp08	1	Tissue	Х	Х			
÷	8/20/2009	14:42	LPR4-ARFT-Ind044	1	Tissue	Х	X			
F	8/21/2009	11:56	LPR5-ARFT-Ind049	1	Tissue	Х	Х			
	8/21/2009	12:09	LPR5-ARFT-Ind048	1	Tissue	Х	X			
		1	Total Number of Containers	10 of 32	Purchase Orde	er / State	ment of V	Vork # AP09_05LPR		
	1) Released by: Company Date/Time: Rec'd by:	164 10 164	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			and time corresponds to the of Specimens were grouped tog Analytical. Alpha Analytical pr	earliest collected individ ether into composites b ocessed and homogenized by Alpha Analytical. S	vironmental. The collection date ual specimen within the composite y Windward onsite at Alpha zed the individuals and composites ample names indicate whether the
	Company: Date/Time:	<u>√</u>	Company: Date/Time:		Company: Date/Time:			To be completed I	by Laboratory u	pon sample receipt:

Date of receipt:: 21 Jul 10	Laboratory W.O. #: P2448
Condition upon receipt: 90-0d	Time of receipt: 10:21
Cooler temperature: _ \(\sigma^\circ\)	Received by Ausselwhito

3	of	4

Project/Client Name:

Passaic RI/FS Tissue

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Analytical Perspectives

COC reference:

Time of receipt:

LPR-AP-EELF-C

Project Number:	Та	sk 16.1 ((09.58.02.31)	<u> </u>	Attn:	Ki	m Mace			Shipping Date: 07/20/2010			
Contact Name:	_ <u>Je</u>	nnifer Par	ker		Shipper:	<u>UI</u>	PS	Airbill Number: 12 19@ 8E 61 439					18E 01 4375
Sampled By:	_Wi	Windward Environmental LLC			Form filled out by:		Jennifer Parker/Dianne Janak			Turnaround requested: Standard			
Sample						geners	PCDDs/PCDFs (s) (s) (16138)	ested (check test	t(s) required)				
Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	PCB Con (1668A)	P. (151)						
8/25/2009	9:25	LPR6-AR	FT-Ind065	1	Tissue	х	Х				c	omments / In [Jar tag num	
8/27/2009	11:08	LPR7-AR	FT-Ind071	1	Tissue	Х	Х					- 	
8/29/2009	8:27	LPR6-AR	FT-Ind073	1	Tissue	х	Х						
9/1/2009	12:55	LPR1-AR	FT-Comp01	1	Tissue	Х	Х						
9/2/2009	15:29	LPR1-ARI	FT-Comp02	1	Tissue	Х	Х						
9/5/2009	15:15	LPR5-ARI	FT-Ind086	1	Tissue	Х	Х						
9/8/2009	12:32	LPR8-AR	FT-Comp17	1	Tissue	X	Х						
9/8/2009	13:15	LPR8-ARI	FT-Comp21	1	Tissue	х	Х						
9/8/2009	13:15	LPR8-ARI	FT-Comp22	1	Tissue	Х	Х						
9/9/2009	8:25	LPR8-ARI	FT-Comp14	1	Tissue	Х	Х						
	1	Total Num	ber of Containers	10 of 32	Purchase Ord	ler / State	ment of V	Vork # AP09_	05LPR				
2) Released by: Company: Date/Time: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corre Specimens we Analytical. Alp therefore, san	esponds to the ea ere grouped toge tha Analytical pro	earliest col ether into ocessed ar d by Alpha	lected individence to composites to the composites to composite the composite of the compos	dual specimen w by Windward on ized the individe	he collection date within the composite. nsite at Alpha uals and composites; indicate whether the
XSan	ples	iw	200 West Mi Suite 401	Ject Ber Street				:::k::058kkj::2820+:::::	ompleted b			•	
f	1 /X	r 1	Suite 401	CICCI SHEEL	Date of receipt:: 21 Jul 10 Laboratory W.O. #: P244						1448	200	

Condition upon receipt:

Cooler temperature:

3	of	4

Passaic RI/FS Tissue

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

Project/Client Name:

CHAIN-OF-CUSTODY/TEST REQUEST FORM COPY

Analytical Perspectives

Time of receipt: 10:21

Project/Client Na	/FS Tissue		To:	_A	nalytical	I Perspectives	COC reference: # LPR-AF	reference: # LPR-AP-EELF-C				
Project Number:	(09.58.02.31)		Attn:	K	im Mace		Shipping Date: 07/20/201	10				
Contact Name:	_Je	ennifer Pa	rker		Shipper: UPS				Airbill Number: 12196186	01 4375 268		
Sampled By:	Sampled By: Windward Environmental LLC				Form filled out by: Jennifer Par			arker/Dianne Janak		maround requested: Standard		
							est(s) Requ	uested (check test(s) requ	red)			
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)					
8/25/2009 9:25 LPR6-ARFT-Ind065		RFT-Ind065	1	Tissue	Х	Х		Comments / Instru				
			RFT-Ind071	1	Tissue	Х	Х		[lar tag number	[(2)]		
8/29/2009	8:27	LPR6-AR	RFT-Ind073	1	Tissue	Х	Х					
9/1/2009 12:55 9/2/2009 15:29		LPR1-AR	PR1-ARFT-Comp01	1	Tissue	Х	Х					
		LPR1-AR	RFT-Comp02	1	Tissue	х	х					
9/5/2009	15:15	LPR5-AR	kFT-Ind086	1	Tissue	Х	х					
9/8/2009	12:32	LPR8-AR	FT-Comp17	1	Tissue	Х	Х					
9/8/2009	13:15	LPR8-AR	FT-Comp21	1	Tissue	Х	Х					
9/8/2009	13:15	LPR8-AR	FT-Comp22	1	Tissue	Х	Х					
9/9/2009	8:25	LPR8-AR	FT-Comp14	1	Tissue	X	Х					
	•	Total Num	nber of Containers	10 of 32	Purchase Ord	er / State	ment of \	Work # AP09_05LPR				
2) Released by: Company: Date/Time: Date/Time: Red by: Red by:			3) Released by: Company: Date/Time: Rec'd by:			and time corresponds t Specimens were groups Analytical. Alpha Analyt therefore, samples are r	ere collected by Windward Environmental. The co to the earliest collected individual specimen within the together into composites by Windward onsite tical processed and homogenized the individuals a eleased by Alpha Analytical. Sample names indica (Ind) or composite (Comp).	n the composite. at Alpha and composites;				
Company: Date/Time:			Company: Date/Time:		Company: Date/Time:							
450 · · · · · · · · · · · · · · · · · · ·	Λ . <i>(</i> ·	. 40 .	O. a iont			***		To be complet	ed by Laboratory upon sample r	boratory upon sample receipt:		
Ksampl	س جند	- The	290 West Me Suite 401	ercer Street			المالا					

Condition upon receipt:

Cooler temperature:

	Project/Client N	ame:	Pas	ssaic RI	/FS Tissue		То:	_A	nalytical	Perspecti	ves	coc	reference:	# LPR-AP-EELF-D	
	Project Number:		Tas	sk 16.1 (09.58.02.31)		Attn:	K	m Mace			Ship	Shipping Date: 07/20/2010		
(Contact Name:		Jer	nifer Pa	rker		Shipper:	U	PS			Airb	ill Number:	12198788 61 4375	
:	Sampled By:		Wir	ndward E	Environmental LLC		Form filled out by	y: <u>J</u> e	Jennifer Parker/Dianne Janak Turnaround requested: Stan						
								est(s) Requ	ested (check t	est(s) required	1)				
	Sample Collection Date (m/d/y)	Time	e	Sar	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)						
X	9/2/2009	14:5	9	LPR2-AR	FT-Comp04	1	Tissue	. x	Х				1	nments / Instructions Uar tag number(s)]	
X	9/5/2009	12:0	3	LPR1-AR	FT-Ind085	1	Tissue	Х	х					uar rag number(s)j	
╽															
╽															
}								-		1					
ŀ				otal Num	ber of Containers	2 of 32	Purchase Ord	ler / State	ment of V	Vork # APO	k # AP09_05LPR				
	1) Released by: Company of Date/Time: Rec'd by:	2) Released by: Company: Date/Time: Rec'd by:			2 3. 32	3) Released by: Company: Date/Time: Rec'd by:	act, y state		NOTES Individual specimens were colle and time corresponds to the ea Specimens were grouped toget Analytical. Alpha Analytical pro			ted by Windward Environmental. The collection d liest collected individual specimen within the com er into composites by Windward onsite at Alpha essed and homogenized the individuals and comp by Alpha Analytical. Sample names indicate wheth omposite (Comp).			
	Company: Date/Time:				Company: Date/Time:	Company: Date/Time:	apane-								
•	+ Samples in this proper			Sexualine		000000000000000000000000000000000000000	To be	completed	l by Labo		on sample receipt:				
	7.	Ward Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343			Date of	receipt:: ဍ	1 Vu	११०	Lab	oratory W.C	o.#: H2	449			
1	Win				Condition	on upon rec	eipt: 20 0	od.							
	y ya.aa.				n-Inπ4	12.20.12.70.110		Commenter of the Comment of the Comm	A	Received by Olivina And Line					

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1	ot	3	

CHAIN-OF-CUSTODY/TEST REQUEST FORM OPY Pa450 1/3

Project/Client Na	me: P	assaic	RI/FS Tissue	1	Го:	At	nalytical I	Perspectives	COC ref erence # LPR-AP-EELWB-A			
Project Number:		ask 16	.1 (09.58.02.31)		Attn:	Ki	m Mace	· .	Ship	ping Date:	07/20/2010	
Contact Name:	J	ennifer	Parker		Shipper:	uPS					1219E1BE 01 4375 268	
Sampled By:		Vindwa	rd Environmental LLC		orm filled out by	by: Jennifer Parker/Dianne Janak			Turnaround requested: Standard			
						T	est(s) Reque	sted (check test(s) required)				
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
9/2/2009	14:59	LDD	2-ARCT-Comp04	1	Tissue	х	Х		.,,	7	omments / Instructions (Far tag number(s))	
9/5/2009	12:03	_	L-ARCT-Ind085	1	Tissue	х	X			-	par jag munuertyj	
8/11/2009	7:46		3-ARWB-Ind001	1	Tissue	X	X					
8/11/2009	11:30		3-ARWB-ind009	1	Tissue	X	X	 				
8/12/2009	11:36		3-ARWB-Ind012	1	Tissue	Х	X					
8/18/2009	11:28	-	I-ARWB-Ind024	1	Tissue	×	×					
8/18/2009	12:39		I-ARWB-Ind025	1	Tissue	X	X					
8/20/2009	12:30		5-ARWB-Ind039	1	Tissue	Х	Х					
8/20/2009	14:42	LPR4	1-ARWB-Ind043	1	Tissue	Х	х					
8/21/2009	11:50	LPR!	5-ARWB-Comp11	1	Tissue	Х	Х			<u></u>		
		Total i	Number of Containers	10 of 21	Purchase Or	der / State	ement of V	Nork # AP09_05LPR R				
2) Released by: Company: Company: Date/Time: Rec'd by:								NOTES Individual specimens were col and time corresponds to the e Specimens were grouped tog Analytical, Alpha Analytical pr	earliest co ether into ocessed a ed by Alpi	ollected indivi o composites and homoger ha Analytical.	nvironmental. The collection date idual specimen within the composite. by Windward onsite at Alpha nized the individuals and composites; Sample names indicate whether the	
Company: Date/Time:	· · · · · · · · · · · · · · · · · · ·				Company: Date/Time:							

Ward Seattle, WA 98119

Tel: (206) 378-1364

Environmental LLC Tel: (206) 378-1364

Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt:: 21 Jul 10	Laboratory W.O. #: P2450
Condition upon receipt:	Time of receipt: 10:21
Cooler temperature: - 4°	Received by: Arusselwhite

2	of	3	
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CHAIN-OF-CUSTODY/TEST REQUEST FORM

P2450 2/3

ect/Client Name: Passaic RI/FS Tissue			To: Analytical P			Perspectives	COC reference: # LPR-AP-EELWB-B			
Project Number: Task 16.1 (09.58.02.31)				_Ki	m Mace		Shipping Date: 07/20/2010			
Contact Name: Jennifer Parker			Jennifer Parker			Shipper: UPS				Airbill Number: 12/96786 01 4375 26
Wi	ndward Environmental LLC		Form filled out by:	Je	ennifer Pa	rker/Dianne Janak	Turnaround requested: Standard			
					est(s) Reque	ested (check test(s) require	ed)			
Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
8:17	LPR4-ARWB-Ind060	1	Tissue	Х	Х		Comments / Instructions (lactag number(s))			
9:22	LPR5-ARWB-Ind062	1	Tissue	X	х		(Initing flamme (S))			
8:08	LPR7-ARWB-Ind070	1	Tissue	X	Х					
8:47	LPR6-ARWB-Ind069	1	Tissue	X	Х					
10:49	LPR6-ARWB-Ind074	1	Tissue	×	Х					
12:37	LPR1-ARWB-Comp03	1	Tissue	Х	Х					
14:00	LPR8-ARWB-Comp16	1	Tissue	Х	Х					
10:30	LPR8-ARWB-Comp15	1	Tissue	Х	Х					
12:32	LPR8-ARWB-Comp18	1	Tissue	Х	Х					
7:49	LPR8-ARWB-Comp13	1	Tissue	Х	Х					
1	Total Number of Containers	10 of 21	Purchase Ord	er / State	ment of V	Nork # AP09_05LPR	,			
	Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were grouped Analytical. Alpha Analytica therefore, samples are rel	re collected by Windward Environmental. The collection date the earliest collected individual specimen within the composite. It together into composites by Windward onsite at Alpha all processed and homogenized the individuals and composites; leased by Alpha Analytical. Sample names indicate whether the nd) or composite (Comp).			
:	This panent					To be complete	ed by Laboratory upon sample receipt:			
	Time 8:17 9:22 8:08 8:47 10:49 12:37 14:00 10:30 12:32 7:49	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC Windward Environmental LLC Sample Identification 8:17	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC Windward Environmental LLC # of Containers 8:17 LPR4-ARWB-Ind060 1 9:22 LPR5-ARWB-Ind062 1 8:08 LPR7-ARWB-Ind070 1 8:47 LPR6-ARWB-Ind069 1 10:49 LPR6-ARWB-Ind074 1 12:37 LPR1-ARWB-Comp03 1 14:00 LPR8-ARWB-Comp16 1 10:30 LPR8-ARWB-Comp15 1 12:32 LPR8-ARWB-Comp13 1 7:49 LPR8-ARWB-Comp13 1 Total Number of Containers 10 of 21 2) Released by: Company: Company: Date/Time: Rec'd by: Company:	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)			

Ward Ward environmental LLC

Date of receipt:: 21 Jul 10	Laboratory W.O. #: Pa450
Condition upon receipt:	Time of receipt: 10:21
Cooler temperature:	Received by Phusselwhite

_3 of _	3 CHAIN	CHAIN-OF-CUSTODY/TEST REQUEST FORM								
Project/Client Name:	Passaic RI/FS Tissue	To:	Analytical Perspectives	COC reference:	# LPR-AP-EELWB-C					
Project Number:	Task 16.1 (09.58.02.31)	— Attn:	Kim Mace	Shipping Date:	07/20/2010					
Contact Name:	Jennifer Parker	Shipper:	UPS	Airbill Number:	1219018E 01 4375					
	1.11.0		Janaifar Badyar/Dianna Janak	Turneround requir	standard					

Project Number:	Tas	sk 16.1 (09.58.02.31)		Attn:	Kii	n Mace		Shipping Date:	07/20/2010		
Contact Name: Jennifer Parker				Shipper:	UF		teriDiana tanah	Airbill Number:			
ampled By:	_Wir	ndward Environmental LLC		Form filled out by:	_ 	nniter Pa	rker/Dianne Janak	Turnaround req	uested: Standard		
					To	est(s) Reque	ested (check test(s) required	d)			
Sample Collection Date (m/d/y)	Tim e	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
9/9/2009	11:25	LPR8-ARWB-Comp19	1	Tissue	X	Х			Comments / Instructions [Jar tag_number(s)]		
			<u> </u>		<u></u>						
				<u> </u>							
	τ	otal Number of Containers	1 of 21	Purchase Ord	er / State	ment of V	Vork # AP09_05LPR				
Company: Rec'd by: Company: Date/Time: Company: Date/Time:	14D 10164	2) Released by: Company: Date/Time: Rec'd by; Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to t Specimens were grouped Analytical, Alpha Analytica	the earliest collected inc together into composit al processed and homo leased by Alpha Analytic	d Environmental. The collection date dividual specimen within the composite. Ites by Windward onsite at Alpha genized the individuals and composites; cal. Sample names indicate whether the b).		
, -	۸. *	this Project		<u> </u>		 .	To be complete	ed by Laborator	y upon sample receipt:		

Date of receipt:: 21 Jul 10	Laboratory W.O. #: P2450
Condition upon receipt:	Time of receipt: \O:Q\
Cooler temperature:	Received by Musselufit

1	of	3

CHAIN-OF-CUSTODY/TEST REQUEST FORM OPY P2451 1/2

P	roject/Client Nar	ne: Pas	ssaic RI/F	S Tissue	Te	o:	An	alytical <u>P</u>	erspectives	cc	C ref erence	# LPR-AP-EELWB-A	<u> </u>
	roject Number.			9.58.02.31)	A	ttn:	Kir	n Mace		Sh	ipping Date:	07/20/2010	_
	ontact Name:		nifer Park		 SI	hipper:	UF	S			rbill Number:	1219E1BE 01 4375 2	<u>(8</u>
	ampled By:			nvironmental LLC		orm filled out by:	Je	nnifer Par	ker/Dianne Janak	Tu	maround requ	lested: Standard	
_2	ampied by.		navara Er								<u> </u>		
ſ			<u> </u>					st(s) Reques	sted (check test(s) require	ed)	_		
	Sample Collection Date (m/d/y)	Time	Sam	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)				omments / Instructions	
ľ	9/2/2009	14:59	LDD2 ADC	T-Comp04	1	Tissue	X	Х				[lar tag number(s)]	
ŀ		12:03	LPR1-ARC		1	Tissue	Х	х					
-	9/5/2009	7:46	 	WB-Ind001	1	Tissue	X	Х					
٦	8/11/2009	11:30	 	WB-Ind001	1	Tissue	X	х					
٦	8/11/2009		+	WB-Ind012	1	Tissue	X	х					
	8/12/2009	11:36 11:28		WB-Ind012 WB-Ind024	1	Tissue	X	X					
7	8/18/2009	12:39	· 	WB-Ind025	1	Tissue	x	X					
7	8/18/2009 8/20/2009	12:39	+	WB-Ind039	1	Tissue	Х	х					
Y.	8/20/2009	14:42	+	WB-Ind043	1	Tissue	х	х					
×	8/21/2009	11:50	+	WB-Comp11	1	Tissue	X	×					
7	8/21/2009		—ا	 	10 of 21			ment of V	Vork # AP09_05LPR	R			
			I Otal Num	ber of Containers	10 01 21		161 / State	inche or t	NOTES				
ĺ	1) Released by:	4		2) Released by:		3) Released by:			Individual specimens w	ere collected	by Windward E	vironmental. The collection date	
	Aflore	1							Specimens were groups	ed together i	nto composites	dual specimen within the compo by Windward onsite at Alpha	
İ	Company.	6HD	,	Company:		Company:			Analytical Alpha Analy	tical processe	ed and homoger	ized the individuals and compos	ites;
į	Date/Time.	10 16	40	Date/Time:		Date/Time:			therefore, samples are of sample is an individual	released by A (Ind) or com	Alpha Analyticai. posite (Comp).	Sample names indicate whether	TING
	Rec'd by:	, - , U	, -	Rec'd by:		Rec'd by:				,	•		
	UF	5		1									
	Company:			. Company:		Company:							
	Date/Time:			Date/Time:		Date/Time:							<u></u>

To be co	mpleted by Laboratory upon sample receipt:
Date of receipt:: 21 Jul 10	Laboratory W.O. #: P2457
Condition upon receipt:	Time of receipt: 10:21
Cooler temperature: - 4°	Received by: Phusselwhite

-	2	T 3		CH/	47IA-Q1	·-CU	210	UY/I	FZI	KEQU	EST FO	RM TO	T 7 Pa	203 of 1451
	Project/Client N	ame: _	Passaic R	I/FS Tissue		To:		A	nalytical	Perspectiv	/es	COC reference:	#LPR-AP-EE	
	Project Number	· _	Task 16.1	(09.58.02.31)		Attn:			m Mace			Shipping Date:	07/20/2010	CVVD-D
	Contact Name:	_	Jennifer Pa	irker		Shipper:		U	 PS			Airbill Number:	12957850	(4375)
	Sampled By:		Windward	Environmental LLC			ed out by:	_		rker/Diann	e Janak	_	ested: Standard	
			 			T	<u> </u>	Т	est(s) Requi	ested (check to	est(s) required)			
j	Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	M	atrix	PCB Congeners (1668A)	PCDDs/PCDFs (16138)					
X	8/22/2009	8:17	LPR4-AF	RWB-Ind060	1	Tis	sue	X	Х				mments / Instruction	ns
Ð	8/22/2009	9:22	LPR5-AF	RWB-Ind062	1	Tis	ssue	х	X	1			<pre>(lar tag number(s))</pre>	<u> </u>
•	8/27/2009	8:08	LPR7-AF	RWB-Ind070	1	Tis	sue	X	X	 			··	
۲	8/27/2009	8:47	LPR6-AR	WB-Ind069	1	Tis	sue	Х	×	†				
	8/29/2009	10:49	LPR6-AR	WB-Ind074	1	Tis	sue	X	×	 				<u> </u>
	9/3/2009	12:37	LPR1-AR	WB-Comp03	1	Tis	sue	Х	х					 -
ĺ	9/7/2009	14:00	LPR8-AR	WB-Comp16	1	Tis	sue	Х	x					<u> </u>
	9/8/2009	10:30	LPR8-AR	WB-Comp15	1		sue	X	X	 		····		
	9/8/2009	12:32	LPR8-AR	WB-Comp18	1	Tis	sue	Х	Х	 				
١	9/9/2009	7:49	LPR8-AR	WB-Comp13	1	Tis	sue	х	х				<u> </u>	
1			Total Num	ber of Containers	10 of 21	Purch	ase Orde	r / State	ment of W	ork # APO				
	1) Released by: Company: Date/Time: Company: Date/Time:	14.5 16.9	/0	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Release Comp Date/I Rec'd Compa	ased by: any: Time: by: any:			NOTES Individual sy and time co Specimens v Analytical. A therefore, sa	pecimens were colli rresponds to the ea vere grouped toge Ipha Analytical pro imples are released	ected by Windward Envi idiest collected individu ther into composites by cessed and homogenize by Alpha Analytical, Sa composite (Comp).	al specimen within the Windward onsite at Al _l d the individuals and c	composite. pha composites:
	X Sand	100 L	u Jhi	a Playert			_ _	 		Tobo				
	CE NP		·	200 West Me Suite 401	rcer Street	Γ	1.01					/ Laboratory up	on sample rece	ipt:
V.	X/ira	$\neg \langle \mathbf{x} \rangle$	7ard	Suite 401 Seattle, WA 9					1 Ju			ory W.O. #: PQ	451	
*	VIII VV	епуіго	nmental L	LC Tel: (206) 378 Fax: (206) 217	-1364			upon rece	ipt: go	od		receipt: 10:2	1 7 3	
						Ŀ			-4		Receive	UNIT WE KLU	sserm	tel

Project/Client Nar	ne: Pa	assaic RI/FS Tissue		То:	Anal	ytical Pe	rspectives			# LPR-AP-RB1
Project Number:	09	0.58.02.31		Attn:	Kim	Масе	- 	Ship	ping Date:	03/24/2010
Contact Name: Jennifer Parker Windward Environmental LLC			Shipper:	UPS				ill Number:		
			Form filled out by:	Ellen	Collins/D	Diane Janak	Turr	around requested: Standard		
	- + -				1	Test(s) Reque	ested (check test(s) red	quired)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)			C	omments / Instructions [Jar tag number(s)]
3/23/2010	16:21	LPR-032310-RB	2	Water	Х	Х				
		Total Number of Containers	2	Purchase Order	/ Stater	ment of Wo	ork # AP09_05LPR			

Date/Time:

Rec'd by:

Company: Date/Time:

Wind Ward environmental LLC

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date/Time:

Rec'd by:

Company: Date/Time:

To be completed by Laboratory upon sample receipt:

Date of receipt:: 25 Mor 10	Laboratory W.O. #: #2463
Condition upon receipt:	Time of receipt: (C: 18
Cooler temperature: 35	Received by Musselulito

Date/Time:

Rec'd by:

Company: Date/Time:

CHAIN-OF-CUSTODY/TEST REQUEST FORM # LPR-AP-RB2 **Analytical Perspectives** Passaic RI/FS Tissue To: Project/Client Name: 04/12/2010 Kim Mace Shipping Date: 09.58.02.31 Attn: Project Number: Airbill Number: 1219E18E014320 **UPS** Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard Windward Environmental LLC Ellen Collins/Diane Janak Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners PCDDs/PCDFs (16138) Sample Collection Date # of Sample Identification Containers Matrix (m/d/y)Time Comments / Instructions 2 Water Χ Χ 4/12/2010 10:40 LPR-041210-RB [Jar tag number(s)] **Total Number of Containers** 2 Purchase Order / Statement of Work # AP09 05LPR NOTES 1) Released by 4) Released by: 3) Released by: 2) Released by: Company: Company: Company: Date/Time: Date/Time: Date/Time: Rec'd by: Rec'd by: Rec'd by: Company: Company: Company: Company: Date/Time: Date/Time: Date/Time:

Date/Time:

To be completed by Laborator	y upon sample receipt:
	The second of th

Date of receipt:: 13 Apr 10	Laboratory W.O. #. P2463
Condition upon receipt:	Time of receipt: 10:28 Am
	Received by Phonese white

oject/Client Na	•	Го:	Α	nalytical	Perspect	ives	COC reference	e # LPR-AP-RB3			
oject Number:	-	58.02.31		Attn:	K	im Mace			Shipping Dat	Shipping Date: 06/08/2010	
ntact Name:	Jer		Shipper:	per: UPS			Airbill Numbe	er: 1219E18E014261			
mpled By:		ndward Environmental LLC		Form filled out by:	Jennifer Parker/Ellen Collins				Turnaround r	equested: Standard	
-	- 1 7.				7	rest(s) Reque	ested (check	test(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	, PCB Congeners (1668A)	PCDDs/PCDFs (16138)					
6/8/2010	13:30	LPR-060810-RB	2	Water	Х	X			****	Comments / Instructions [lar tag number(s)]	
0/0/2010	10	ELIK GOOGLO KD									
					11121						
											
										1.000	
							<u> </u>				
	1	Total Number of Containers	2	Purchase Orde	er / State	ement of \	Nork# AP	09_05LPR			
Released by:	10	2) Released by:		3) Released by:			NOTES				
Main	Z										
ompany	H1	Company:		Company:							
Date/Time		Date/Time:		Date/Time:							
C/S//() Resc of toys:	1655	Rec'd by:		Rec'd by:							
· ()	P										
Company:	,)	Company:		Company:							
Date/Time:		Date/Time:		Date/Time:			-				



Date of receipt:: Ok 1		Laboratory W.O. #:	2463
Pate of receipt:: 9 J		77.	
ondition upon receipt:		Time of receipt: \` \	
ooler temperature:) s	Received by: 1711	Moselwhite

oject/Client Name: Passaic RI/FS Tissue oject Number: 09.58.02.31					То:	_Aı	nalytical	Perspectiv	es	coc	reference	# LPR-AP-RB4
					Attn:	Kim Mace				_ Shipp	ing Date:	06/15/2010
ontact Name:				Shipper:	<u>U</u>	PS		Airbil	l Number	12/9E7BE 014181 467		
npled By: Windward Environmental LLC			Form filled out by:	<u>Je</u>	nnifer Pa	rker/Ellen C	Collins	Turnaround requested: Standard				
		1		PAN			est(s) Reque	ested (check te	est(s) required)			
Sample Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
6/15/2010	14:15	LPR-061	510-RB	2	Water	Х	X					omments / Instructions [Jar tag number(s)]
	· · · - · ·											
			- 77	1			<u> </u>	· [
		Total Num	ber of Containers	2	Purchase Ord	er / State	ement of V	Vork # AP0	9 05LPR			
) Released by:		Total Itali	2) Released by:		3) Released by:	.,		NOTES				
Company. Date/Impe:	Y HA		Company:		Company:							
	145	75	Date/Time:		Date/Time:							

Ward Ward environmental LLC

To be comple	eted by Laboratory	upon sample receipt:
Pate of receipt:: 16 June 10	Laboratory W.O. #:	2463
Condition upon receipt: Q ood	Time of receipt; [)	:29 AM
ooler temperature: — °	Received by:	ussel white

CHAIN-OF-CUSTODY/TEST REQUEST FORM of **Analytical Perspectives** # LPR-AP-RB5 COC reference Passaic RI/FS Tissue To: Project/Client Name: 06/29/2010 Shipping Date: Kim Mace Attn: 09.58.02.31 Project Number: Airbill Number: 12/9E/8F 014296 3509 **UPS** Shipper: Jennifer Parker Contact Name: Turnaround requested: Standard Jennifer Parker/Ellen Collins Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) PCB Congeners PCDDs/PCDFs (1613B) (1668A)Sample # of Collection Matrix Sample Identification Containers Date (m/d/y) Time Comments / Instructions Χ Χ Water LPR-062910-RB 6/29/2010 10:40 [Jar tag number(s)] Purchase Order / Statement of Work # AP09_05LPR **Total Number of Containers** 2 NOTES 3) Released by: 2) Released by: 1) Released by Company: Company: Date/Time: Date/Time: Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Ward Ward environmental LLC

Date of receipt:: 30 June 10	Laboratory W.O. #: P3 463
	Time of receipt: 10:15
Cooler temperature:	Received by Wusselwitt

roject/Client Nar	ne: Pa	ssaic RI/FS Tissue		To: Analytical Perspectives COC refere							
roject Number:	09	.58.02.31 (Task 16.1)		Attn:	_Ki	m Mace			Shipping Date: 07/13/2010		
ontact Name: Jennifer Parker				Shipper:	U	PS			Airbill Number	1219E18E 014289	
ampled By:	W	indward Environmental LLC		Form filled out by:		nnifer Pa	rker/Ellen Collir	ns	Turnaround requested: Standard		
						est(s) Requ	ested (check test(s)	required)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
07/13/10	8:15	LPR-071310-RB	2	Water	Х	Х				Lomments / Instructions [Jar tag number(s)]	
07710710		2. ((0, 10 10									
	107									Apply.	
					 						
						ļ					
]							MI-# ADOS OF		<u> </u>		
		Total Number of Containers	2		er / State	ment of v	Work # AP09_05	LPK			
1) Released by:	14	2) Released by:		3) Released by:			NOTES				
(Illing)		Company:		Company:							
Company	HA			Date/Time:							
Date/Time:	1038	S Datey filme.									
Rec'd by:		Rec'd by:		Rec'd by:							
Company:	S	Company: Date/Time:		Company: Date/Time:							
				I							

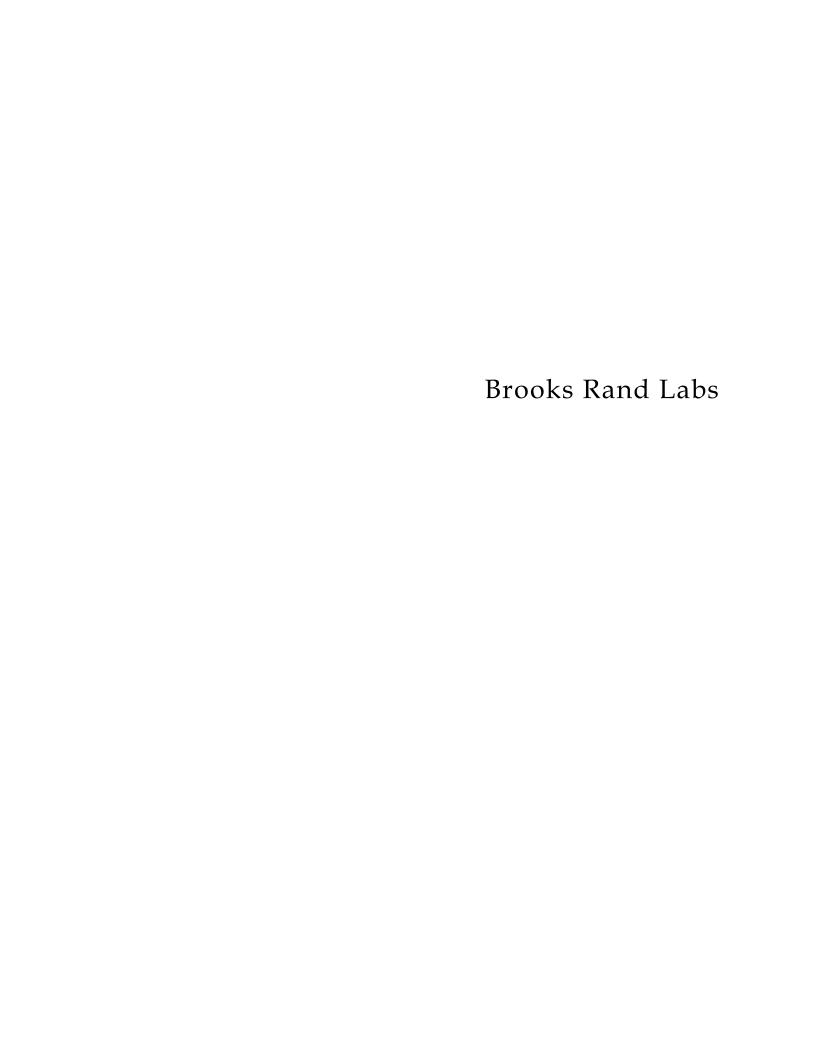


Date of receipt:: 14 JW 10	Laboratory W.O. #: P2463
Condition upon receipt: 2000	Time of receipt: Q: 49 AM
	Received by prusse least

1 0	of <u>1</u>		СНА	IN-OF	-custo	DY/1	EST I	REQU	EST FO	RM		
Project/Client N	Project/Client Name: Passaic RI/FS Tissue				To: Analytical Po			Perspectiv	/es	COC referer	uce # LPR-AP-RB7	
Project Number	roject Number: 09.58.02.31 (Task 16.1)				Attn:		m Mace	··· •		Shipping Da	nte: 07/19/2010	
Contact Name:				Shipper:	U	UPS				per: 12/9E18E 01 4220 4		
Sampled By:	Sampled By:		Environmental LLC		Form filled out by	: <u>J</u> e	ennifer Pa	rker/Ellen	Collins	Turnaround requested: Standard		
						Test(s) Requested (check test(s) required)						
Sample Collection Date (m/d/y)	Time	Sal	mple Identification	# of Containers	Matrix	PCB Congeners (1668A)	PCDDs/PCDFs (1613B)					
7/19/2010	12:30	LPR-07	1910-RB	2	Water	, X	Х				Comments / Instructions [lar tag number(s)]	
							7					
				<u> </u>				<u> </u>				
		Total Num	nber of Containers	2	Purchase Ord	ler / State	ment of V	Vork # APO	9 051 PR			
1) Released by:	4		2) Released by:	I	3) Released by:	, /		NOTES	3_00			
Company	141		Company:		Company:							
Date/Time: //	1605	_	Date/Time:		Date/Time:							
Rec'd by:	, , , ,		Rec'd by:		Rec'd by:							
∥ UF	25											
Company: Date/Time:			Company: Date/Time:		Company: Date/Time:							



To be comple	eted by Laboratory	upon sample receipt:
Date of receipt:: 20 JW 10	Laboratory W.O. #: 🗜	2463
Condition upon receipt: 900 D	Time of receipt: 10	.a
Cooler temperature: 30	Received by:	russelutite



CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Nar	ne: Pa	assaic RI/	FS Tissue		То:	Brook	s Rand L	abs			# LPR-BRL-MH-1A
Project Number:	_09	9.58.02.31			Attn:	Misty I	Kennard-N	Лауег		Shipping Date	03/23/2010
Contact Name:	_Je	ennifer Par	rker		Shipper:	UPS				— Airbill Number	: 1Z 19E 18E 014 100 5224
Sampled By: Windward Environmental LLC					Form filled out by:	Jennife	er Parker	/ Diane Ja	nak	Turnaround re	quested: Standard
				T	T 1	T	act(c) Rogue	sted (shock to	ost(s) required)		
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	Test(s) Requested (check test(s) required) (1630) (1631) Inorganic Arsenic (1632) Matrix Matrix			Comments / Instructions [Jar tag number(s)]		
8/26/2009	07:12	LPR6-CSI	MH-Comp37	1	Tissue	Х	Х	Х			
9/15/2009	09:58	LPR6-CSMH-Comp38		1	Tissue	Х	Х	Х			
8/20/2009	13:03	LPR4-CSMH-Comp31		1	Tissue	Χ	Х	Х			
8/27/2009	07:13	LPR6-CSMH-Comp41		1	Tissue	Х	Х	Х			
8/25/2009	07:26	LPR6-CSMH-Comp42		1	Tissue	Х	Х	Х	_		
8/27/2009	07:52	LPR6-CSI	MH-Comp44	1	Tissue	Х	Х	Х			
8/25/2009	09:24	LPR7-CSI	MH-Comp45	1	Tissue	X	Х	Х			
8/25/2009	09:24	LPR7-CSI	MH-Comp46	1	Tissue	Х	Х	Х			
8/25/2009	09:35	LPR7-CSI	MH-Comp49	1	Tissue	X	Х	Х			
8/26/2009	08:58	LPR7-CSI	MH-Comp53	1	Tissue	X	Х	Х			
\sim		Total Num	ber of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wo	rk # BRL09_	01LPR		
1) Released by: Company: Alpha Date/Time: Company: Company: Date/Time:	Company: Alpria Analytical Date/Tipne: Date/Tipne: Date/Time: Rec'd by: Company:		0920	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released Company: Date/Time: Rec'd by: Company: Date/Time:		Wind date colle com toge onsi Anal	vidual specimens were collected by dward Environmental. The collection and time corresponds to the earliest exted individual specimen within the posite. Specimens were grouped ether into composites by Windward the at Alpha Analytical. Alpha ytical processed and homogenized composites; therefore, samples are used by Alpha Analytical.	



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 To be completed by Laboratory upon sample receipt:

Date of receipt:: 3.2 4.16	Laboratory W.O. #: しっしろのしつ
Condition upon receipt: 900 &	Time of receipt: 0930
Cooler temperature: - 27°C	Received by: 74

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Nar	7	o:	Brook	s Rand I	_abs			# LPR-BRL-MH-1B			
Project Number:	t Number: 09.58.02.31					Misty	Kennard-	Mayer		Shipping	Date: 03/23/2010
Contact Name: Jennifer Parker				Shipper:	UPS				Airbill Nu	mber: 1Z 19E18E 014100 5224	
Sampled By:	W	indward E	Environmental LLC	F	orm filled out by:	Jennifer Parker / Diane Janak				Turnarou	nd requested: Standard
							+(-) D				
								T	est(s) required)		
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]
9/10/2009	13:02	LPR8-CS	MH-Comp61	1	Tissue	Х	Х	Х			
8/25/2009	09:39	LPR7-CS	MH-Comp48	1	Tissue	Х	Х	Х			
9/9/2009	09:54	LPR8-CSMH-Comp54		1	Tissue	Х	Х	Х			
8/25/2009	09:35	LPR7-CSMH-Comp50		1	Tissue	Х	Х	Х			
9/9/2009	09:54	LPR8-CS	MH-Comp55	1	Tissue	Х	Х	Х			
9/8/2009	08:44	LPR8-CS	MH-Comp56	1	Tissue	Х	Х	Х		_	
9/9/2009	08:56	LPR8-CS	MH-Comp57	1	Tissue	X	Х	Х			
9/1/2009	12:33	LPR1-CS	MH-Comp01	1	Tissue	Х	Х	Х			
9/2/2009	15:02	LPR1-CS	MH-Comp02	1	Tissue	Х	Х	Х			
9/2/2009	15:46	LPR1-CS	MH-Comp03	1	Tissue	Х	Х	Х			
		Total Nun	nber of Containers	10 of 21	Purchase Order / Statement of Work # BRL09 01LPR						
1) Released by:	N-		2) Released by:		3) Released by:	:		4) Released	by:		NOTES Individual specimens were collected by Windward Environmental. The collection
Company: Alpha Analytical Company: Date/Time: 3/23/10 1610 Date/Time:			Company: Date/Time:			Company: Date/Time:	: .		date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped		
Rec'd by:			Rec'd by:		٠.,	Rec'd by:			together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized		
Company: BEL Company: Date/Time:				Company: Date/Time:			Company: Date/Time:	:		the composites; therefore, samples are released by Alpha Analytical.	

Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 To be completed by Laboratory upon sample receipt:

Date of receipt:: 3.24.10	Laboratory W.O. #: 1013 610
Condition upon receipt: 3. 24.15	Time of receipt: 0930
Cooler temperature: -2-7°C	Received by:

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Brooks Rand Labs

Project Number:	_09	.58.02.31		Attn:	Misty Kennard-Mayer					Shipping Date: 03/23/2010		
Contact Name:	_Je	nnifer Parker	S	hipper:	UPS	ill Number: 12.19E18E DI 4100 5224						
Sampled By:	_W	indward Environmental LLC	F	orm filled out by:	Jennifer Parker / Diane Janak					naround requested: Standard		
	***					est(s) Reque	ested (check t	est(s) required))			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]		
9/2/2009	15:46	LPR1-CSMH-Comp04	1	Tissue	Х	Х	Х					
									· · · · · · · ·			
					-							
		Total Number of Containers	1 of 21	Purchase Orde	r / Statem	ent of Wo	 ork	01LPR				
1) Released by: 2) Released by:				3) Released by:			4) Released		NOTES			
Date/Time: Rec'd by: Company: Date/Time:	Rec'd by: Company: Company: Company: Rec'd by: Company:			Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:			Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.		



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt:: る. 24、し	Laboratory W.O. #: (0 1 3 01 U
Condition upon receipt: 9 00 L	Time of receipt: 093 6
Cooler temperature: -27'	Received by:

To be completed by Laboratory upon sample receipt:

#LPR-BRL-MH-1C

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	me: P	assaic R	I/FS Tissue	To:	Brooks Rand Labs					# LPR-BRL-RB1			
Project Number: 09.58.02.31 Contact Name: Jennifer Parker					Attn: Shipper:						Shipping Date: 03/24/2010		
											Number: 1219E18E 014270 80		
Sampled By:		Windward Environmental LLC			Form filled out by:	Ellen	Collins/Di	ane Janak		Turnarc	ound requested: Standard		
						; T	est(s) Reque	ested (check te	est(s) required)				
Sample Collection Date (m/d/y)	Time	Sa	imple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]		
3/23/2010	16:25	LPR-032	2310-RB	3	Water	Х	Х	X					
		_				<u> </u>	ļ						
							-						
								-					
	<u> </u>												
	·	Total Nun	nber of Containers	3.:	Purchase Orde	r / Statem	ent of Wo	rk # BRL09_0	O1LPR				
1) Released By:	4		2) Released by:		3) Released by:			4) Released i	<u>y:</u>		NOTES		
Lompany: Alpha	a abrtical	=	Company:		Company:			C					
			Date/Time:		Date/Time:		ż	Company: Date/Time:		7.2 4.2.2			
Date / III	_1440		Rec'd by:	tyryr y y	Rec'd by:	•		Rec'd by:			•		
Company: 312 Date/Time: 3	L 25,10	. 1 *	Company: Date/Time:		Company: Date/Time:			Company: Date/Time:					
								<u> </u>			<u></u>		
				1 17, 1141		1	, · ·	To be	completed b	y Labora	tory upon sample receipt:		



Date of receipt:: 3.25(10	Laboratory W.O. #: 1013010
Condition upon receipt: $g \circ \delta$	Time of receipt: 0936
Cooler temperature: A·K	Received by:

1	of	3

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Brooks Rand Labs

Project Number:	_09	.58.02.31			Attn:	Mist	y Kennard	d-Mayer		Shipping Date: 4/7/10		
Contact Name:	_Je	nnifer Par	ker		Shipper:					Airbill Number:	12 19E18E 014/19 096	
Sampled By:	_W	Vindward Environmental LLC Form filled out by: Jennifer Parker					Turnaround requested: Standard					
	. '.						est(s) Reque	sted (check t	est(s) required)	nangu.		
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		Co	omments / Instructions [Jar tag number(s)]	
8/20/2009	13:03	LPR4-CSC	CT-Comp31	1	Tissue	X	Х	Х				
9/1/2009	12:33	LPR1-CSC	CT-Comp01	1	Tissue	Χ	Х	Х				
9/2/2009	15:02	LPR1-CSCT-Comp02		1	Tissue	X	Х	Х				
9/2/2009	15:46	LPR1-CSCT-Comp03		1	Tissue	X	Х	Х				
9/2/2009	15:46	LPR1-CSCT-Comp04		1	Tissue	Х	Х	Х				
9/1/2009	14:04	LPR1-CSCT-Comp06		1	Tissue	X	Х	Х				
9/2/2009	16:33	LPR1-CSC	T-Comp07	1	Tissue	Х	Х	Х				
9/2/2009	12:49	LPR1-CSCT-Comp11		1	Tissue	Х	Х	Х				
8/18/2009	11:41	LPR4-CSC	T-Comp30	1	Tissue	: X	Х	Х				
9/1/2009	12:49	LPR1-CSC	CT-Comp13	1	Tissue	Х	Х	Х				
Л	<u> </u>	Fotal Num	ber of Containers	10 of 24	Purchase Orde	r / Statem	ent of Wo	rk # BRL09_	01LPR			
1) Released by:	//		2) Released by:		3) Released by: 4) Released by:					5) Relea	sed by:	
Company: Date/Time: Ret/d by:	1510	Company: Date/Time: Rec'd by:			Company: Date/Time: Rec'd by:			Company: Date/Time: Rec'd by:		Comp Date/ <u>Rec'd</u>	Time:	
Company: Date/Time:	<i>P</i> S	Company: BRL Date/Time:			Company: Date/Time:			Company: Date/Time:		Comp Date/1	· II	
		*						To be	completed by I	aboratory u	non sample receint:	

•	****	
T.	wr ro	$\sqrt{\mathbf{v}}$ 1
: 1	. A 7 mm	/Ward
3	V V JLLJ	LLC
		environmental LLC
		🖊 - Company of the state of th

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

TO DC compt	cted by Euboratory upon sample receipt.
Date of receipt:: 4 8 10	Laboratory W.O. #: 015017
Condition upon receipt: 1000	Time of receipt: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Cooler temperature: 1.30	Received by: Katie Jahanmir

LPR-BRL-CT-A

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client N	ame: P :	assaic Rl	/FS Tissue	To	o :	В	rooks Ra	and Labs			# LPR-BRL-CT-B	
Project Number:	: 09	9.58.02.31	<u> </u>	At		Misty Kennard-Mayer Shi				Date: 4/7/10		
Contact Name:	Je	ennifer Pa	rker	SI	nipper:					Airbill Num	nber: 1219E18E bj 4119 096,	
Sampled By:	V	indward E	Environmental LLC	Fo	orm filled out by:	J	ennifer Pa	arker		Turnaroun	d requested: Standard	
						T	est(s) Reque	sted (check t	est(s) required)	- 		
Sample Collection Date (m/d/y)	Collection		mple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (5)	Inorganic Arsenic (1632)	est(s) required)		Comments / Instructions [Jar tag number(s)]	
9/1/2009	12:09	-	CT-Comp14	1	Tissue	X	Х	X			[sar tag namber(s)]	
9/1/2009	11:03		CT-Comp17	1	Tissue	Х	Х	X				
9/1/2009	10:02		CT-Comp15	1	Tissue	X	Х	Х				
9/3/2009	12:35	LPR2-CS	LPR2-CSCT-Comp18		Tissue	Х	Х	Х				
9/1/2009	11:32	LPR2-CS	CT-Comp19	1	Tissue	Х	Х	Х				
9/1/2009	11:32	LPR2-CS	CT-Comp20	1	Tissue	Х	Х	Х			NET 1	
8/11/2009	10:08	LPR3-CS	CT-Comp24	1	Tissue	Х	Х	X				
8/18/2009	07:43	LPR5-CS	CT-Comp34	1	Tissue	Х	Х	X				
8/12/2009	10:29	LPR3-CS	CT-Comp26	1	Tissue	Х	Х	Х				
8/18/2009	10:35	LPR4-CS	CT-Comp32	1	Tissue	X	Х	X		_		
Total Number of Containers			10 of 24	Purchase Ord	er / Statem	ent of Wo	rk # BRL09_	01LPR				
1) Released by:		_	2) Released by:		3) Released by:			4) Released	by:	5)	Released by:	
Company:			Company:			Company:	•		Company:			
Date/Time:			Date/Time:			Date/Time			Date/Time:			
Rec'd by:			<u>'</u>	Rec'd by:	•		Rec'd by:			Rec'd by:		
Company: Company: Date/Time: Date/Time:			ا. م	Company: Date/Time:			Company: Date/Time	:	I	Company: Date/Time:		

Ward Ward environmental LLC

To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: US\10	Laboratory W.O. #: 1015017
Condition upon receipt: 900 <i>c</i> l	Time of receipt: \000
Cooler temperature: 1.2 (Received by: Katie Talagraphic

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	me: P	assaic RI	/FS Tissue	To:		Brooks	Rand La	abs		# LPR-BRL-CT-C			
Project Number:	09	9.58.02.31		Attn:		Misty Kennard-Mayer				Shipping Date: 4/7/10			
Contact Name: Jennife			ennifer Parker Shipp							 Airbill Numbe	_ , ,		
Sampled By:	V				n filled out by:	Jennife	r Parker				equested: Standard		
			·	T	T .	Te Te	est(s) Reque	sted (check	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]		
8/18/2009	12:01	LPR4-CS	CT-Comp33	1	Tissue	Х	Х	Х					
8/11/2009	07:21	LPR3-CS	CT-Comp27	1	Tissue	Х	Х	Х					
8/13/2009	11:52	LPR3-CS	CT-Comp28	1	Tissue	Х	Х	Х					
8/21/2009	13:46	LPR5-CS	CT-Comp35	1	Tissue	Х	Х	Х					
		·											
		Total Nun	nber of Containers	4 of 24	Purchase Ord	er / Statem	ent of Wo	rk # BRL09	_01LPR	•			
1) Released by:	4	-	2) Released by:		3) Released by:			4) Released	l by:	5) <u>Re</u>	leased by:		
Company;	alla		Company:		Company:			Company	:	Coi	mpany:		
Date/Time:			Date/Time:			Date/Time	<u>:</u>	į	te/Time:				
Rec'6/by://0 1570)	Rec'd by:	<u> </u>	Rec'd by:			Rec'd by:		Red	Rec'd by:		
1100													
Company: Date/Time:			Company: BRL Date/Time:	000	Company: Date/Time:	;		Company Date/Time			npany: re/Time:		
			• •					To be	completed by	v Laboratory	unon sample receipt:		

Ward

10 BC compli	eted by Euboratory upon sample receipt.
Pate of receipt:: $4 q _{10}$	Laboratory W.O. #: \015017
ondition upon receipt: 900d	Time of receipt: 1000
ooler temperature: 1.30	Received by: Katie Tahanmir

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue 90.58.02.31					To:		Brooks	Rand Labs	# LPR-BRL-MH-2A
					Attn:		Misty Ke	nnard-Mayer	Shipping Date: 4/7/10
Contact Name:	Je	ennifer Pa	rker		Shipper:				Airbill Number: 12 19E18E 01 42702915
Sampled By:	V	/indward E	Environmental L	LC	Form filled	out by:	Jennifer	Parker	Turnaround requested: Standard
							Foot(a) Doous	at a d (ala a de ta at/a)	
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	Volume of Sample / # of Containers	Matrix	Methylmercury (1630)	Total Mercury (27)	Inorganic Arsenic (1632) Arsenic (1632)	Comments / Instructions [Jar tag number(s)]
9/8/2009	09:50	LPR8-CS	MH-Comp58	1	Tissue	X	Х	Х	
9/1/2009	14:04	LPR1-CS	MH-Comp06	1	Tissue	. X	Х	X	
9/2/2009	16:33	LPR1-CS	MH-Comp07	. 1	Tissue	Х	Х	Х	
9/2/2009	12:49	LPR1-CS	MH-Comp11	1	Tissue	Х	Х	X	WW Note: Correct
8/20/2009	13:03	LPR4-CS	MH-Comp30	1	Tissue	Х	Х	X	collection date/time for
9/1/2009	12:49	LPR1-CS	MH-Comp13	1	Tissue	Х	Х	х	LPR4-CSMH-Comp30 is
9/1/2009	12:09	LPR2-CS	MH-Comp14	1	Tissue	×	Х	X	8/18/2009 at 11:41.
9/1/2009	11:03	LPR2-CS	MH-Comp17	1	Tissue	X	Х	Х	0/10/2003 at 11.41.
9/1/2009	10:02	LPR2-CS	MH-Comp15	1	Tissue	X	Х	X	
9/3/2009	12:35	- LPR2-CS	MH-Comp18	· 1	Tissue	X	X	X	
		Total Nun	ber of Containe	rs 10 of 20	Purchase Orde	er / Stater	nent of Wo	rk # BRL09_01LP	PR T
1) Felens for tr:		ujásti +.	2) Released by:	or the probability	3) <u>Released by:</u>		:	4) <u>Released by:</u>	5) Released by:
Company:	10	• , •	Company:	g commence	Company:			Company:	. Company:
Date/xime.	المراث				Date/Time:			Datc/Time:	Datc/Time:
UP	/ 70 - >				Rec'd by.		,1 ₆₈	Rec'ri hy:	Foc'a by:
Company:		• **	Company: Ca	BRL	Company:			Company:	Company:

Ward environmental LLC

To be complete	eted by Laboratory upon sample receipt:					
Date of receipt:: 4 8 16	Laboratory W.O. #: FO (SO17					
Condition upon receipt: 4010	Time of receipt: [000					
Cooler temperature:	Received by: Katie, Tahanmir					

2	of	2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic		aic RI/I	FS Tissue	To: Brool			and Labs		# LPR-BRL-MH-2Brev		
Project Number: 09.58.02.31			Attn:		Misty Kennard-Mayer		Shipping Da	te:			
Contact Name: Jennifer Parker			Shipper:				Airbill Numb	per:			
Sampled By:	_	Wind	ward E	nvironmental LLC		Form filled ou	t by:	Jennifer F	Parker	 Turnaround	requested: Standard
1											
								est(s) Reque	sted (check test(s) r	equired)	
Sample Collection Date (m/d/y)	Time		San	nple Identification	Volume of Sample / # of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		Comments / Instructions [Jar tag number(s)]
9/1/2009	11:32	L	PR2-CSN	ИН-Comp19	1	Tissue	Х	Х	X		
9/1/2009	11:32	L	PR2-CSN	ЛН-Comp20	1	Tissue	Х	Х	X		
8/11/2009	10:08	L	PR3-CSN	ЛН-Comp24	1	Tissue	Х	Х	X		
8/18/2009	07:43	L	LPR5-CSMH-Comp34		1	Tissue	Х	х	x		Alpha ID L1003087-36 on bag
8/12/2009	10:29	L	PR3-CSN	/IH-Comp26	1	Tissue	Х	Х	X		
8/18/2009	10:35			/IH-Comp32	1	Tissue	. X	X	X		
8/18/2009	12:01	L	PR4-CSN	/IH-Comp33	1	Tissue	Х	X	X		
8/11/2009	07:21	. L	PR3-CSN	/IH-Comp27	1	Tissue	X	X	X		
8/13/2009	11:52	L	PR3-CSN	/IH-Comp28	1	Tissue	Х	X	X		
8/21/2009	13:46	L	PR5-CSN	/IH-Comp35	1	Tissue	Х	Х	X		
		Tot	al Num	ber of Containers	10 of 20	Purchase Orde	er / Staten	nent of Wo	rk # BRL09_01LPR		
1) Released by:				2) Released by:		3) Released by:			4) Released by:		5) Released by:
Company:				Company:		Company:			Company:		Company:
Date/Time:				Date/Time:		Date/Time:			Date/Time:		Date/Time:
Rec'd by:	Rec'd by:			<u>Rec'd by:</u>			Rec'd by:		Rec'd by:		
Company: Date/Time: BRU Date/Time: Date/Time:			Company: Date/Time:			Company: Date/Time:		Company: Date/Time:			

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

to be comple	eted by Laboratory upon sample receipt:
Date of receipt:: $\mathcal{U} = \mathcal{U}$	Laboratory W.O. #: [815017
Condition upon receipt: Good	Time of receipt: 1000
Cooler temperature:	Received by: Katie Tahanmir

CORRECTED COPY, EMAILED BY CLIENT

1	of	1
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Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Brooks Rand Labs

Project/Client Name:		assaic RI	/FS Tissue		To:	Brooks Rand Labs					# LPR-BRL-RB2 hipping Date: 04/12/2010	
Project Number: 09.58.02.31 Contact Name: Jennifer Parker					Attn: Shipper:	Misty	Kennard-l	Mayer	Shipping D			
						UPS			— Airbill Num	iber: 1219018E014125		
Sampled By:	<u></u>	/indward E	Environmental LLC		Form filled out by:	Ellen (Collins/Dia	ane Janak		Turnaround	requested: Standard	
						·						
ŀ					1 .		1		est(s) required)		•	
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)				
4/12/2010	10!40	LPR-04	1210-RB	3	Water	X	Х	Х			Comments / Instructions [lar tag_number(s)]	
											par ray number(s)j	
					,							
					· ·							
		Total Num	nber of Containers	3	Purchase Order	· / Statem	ent of Wo	rk # BRL09_	01LPR			
1) Released by:	4		2) Released by:		3) Released by:		Ÿ	4) Released	by:	NO	DTES	
Company of			Company:		Company:			6	(
Date/Time:	/ /		Date/Time:		Date/Time:			Company: Date/Time:				
Rec'6/by: // 0	1200		Rec'd by:		Rec'd by:			Rec'd by:				
UPS	16	スン			nec u by.			Rec a by:				
Company: Date/Time:	RL 4/1	3/10/900	Company: Date/Time:		Company: Date/Time;			Company: Date/Time:				
								T- 1				



To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 4 13 10	Laboratory W.O. #: 1016012
	Time of receipt: 900
Cooler temperature: 7. C	Received by: Kate Jananmiv

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Nai	me: Fa	issaic Ki	ro iissue		0:	Droo	ks Rand	Labs			# LPR-BRL-H1-A		
Project Number:	_09	.58.02.31		A	ttn:	Misty	Kennard	-Mayer		Shipping Date: 4/14/2010			
Contact Name:	Je	nnifer Pa	rker	S	Shipper:		UPS				Airbill Number: 1219E18E 014298 38		
Sampled By: Windward E		Environmental LLC	F	orm filled out by:	Jenni	Jennifer Parker/Dianne Janak				Turnaround requested: Standard			
						T	est(s) Reque	ested (check	test(s) required)				
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]		
9/1/2009	13:10	LPR1-CS	HT-Comp05	1	Tissue	Х	Х	Х					
9/1/2009	11:03	LPR2-CS	HT-Comp63	1	Tissue	Х	Х	Х					
9/3/2009	11:10	LPR1-CS	HT-Comp09	1	Tissue	Χ	Х	Х					
8/11/2009	07:21	LPR3-CS	HT-Comp64	1	Tissue	Χ	Х	Х					
9/2/2009	14:13	LPR2-CS	HT-Comp21	1	Tissue	Χ	Х	Х					
8/25/2009	09:24	LPRX-CS	HT-Comp65	1	Tissue	Х	Х	Х					
9/8/2009	07:48	LPR8-CS	HT-Comp66	1	Tissue	Χ	Х	Х					
							<u></u>						
			· ·-	<u>'</u>									
	, .	Total Nun	nber of Containers	7	Purchase Orde	er / Statem	ent of Wo	rk # BRL09	_01LPR				
1) Released by: Company: Date/Time: Rec'd by:	1325 14		2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			4) Released Company: Date/Time		Win date coll com toge	vidual specimens were collected by dward Environmental. The collection e and time corresponds to the earliest ected individual specimen within the aposite. Specimens were grouped ether into composites by Windward ite at Alpha Analytical, Alpha		
Company: Date/Time:	PRL C	4/15/10	Company: Date/Time:		Company: Date/Time:			Company: Date/Time		Ana the	lytical processed and homogenized composites; therefore, samples are ased by Alpha Analytical.		

Ward Ward environmental LLC

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CHAIN-OF-CUSTODY/TEST REQUEST FORM

				0;		KS Kanu					# LPR-BRL-MII-A	
Project Number: 09.58.02.31 Contact Name: Jennifer Parker			/	Attn:	Misty	Kennard-	-Mayer		Shipping Date: 4/14/2010			
				Shipper:	UPS			Airbill Number:		1219E18E01 4298 384		
W	ndward E	nvironmental LLC		Form filled out by:		Jennifer Parker/Dianne Janak				Turnaround requested: Standard		
	<u> </u>		<u> </u>		т.	oct(c) Poque	stad (shask t	ost(s) required)				
						st(s) Reque		est(s) required)				
Time	Sar	mple Identification	# of Containers	Matrix	Methylmercur (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)				mments / Instructions [Jar tag number(s)]	
8:50	LPR7-CSI	MT-Comp52	1	Tissue	Χ	X	Х					
14:04	LPR1-CS	MT-Comp08	1	Tissue	Χ	Х	Х					
12:08	LPR1-CSI	MT-Comp10	1	Tissue	Х	Х	Х			···-		
12:00	LPR1-CSI	MT-Comp12	1	Tissue	Χ	Х	Х					
12:26	LPR2-CSI	MT-Comp16	1	Tissue	Х	Х	Х					
11:27	LPR6-CSI	MT-Comp39	1	Tissue	X	Х	X					
11:46	LPR2-CSI	MT-Comp22	1	Tissue	Χ	х	Х					
11:07	LPR2-CSI	MT-Comp23	1	Tissue	Х	Х	Х					
06:50	LPR6-CSI	MT-Comp40	1	Tissue	Х	Х	Х					
09:24	LPR3-CSI	MT-Comp25	1	Tissue	Х	Х	Х					
	Total Num	ber of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wo	rk # BRL09_	01LPR				
11		2) Released by:	4. A.	3) Released by:			4) Released	by:		NOTES		
AA		Company:	·	Company:	•	-	Company:	·		Windwar	I specimens were collected by d Environmental. The collection time corresponds to the earliest	
0 132	5	Date/Time:	* - * * * * * * * * * * * * * * * * * *	Date/Time:			Date/Time:	1.0	÷	collected	individual specimen within the	
SPL O	20	Rec'd by: Company: Date/Time:	e i stati Die statione	Rec'd by: Company: Date/Time:			Rec'd by: Company: Date/Time:			together onsite at processes composit	e. Specimens were grouped into composites by Windward Alpha Analytical. Alpha Analytical d and homogenized the es; therefore, samples are released	
	Time 8:50 14:04 12:08 12:26 11:27 11:46 11:07 06:50 09:24	Time Sai 8:50 LPR7-CS 14:04 LPR1-CS 12:08 LPR1-CS 12:26 LPR2-CS 11:27 LPR6-CS 11:46 LPR2-CS 11:07 LPR2-CS 06:50 LPR6-CS 09:24 LPR3-CS	Time Sample Identification 8:50 LPR7-CSMT-Comp52 14:04 LPR1-CSMT-Comp08 12:08 LPR1-CSMT-Comp10 12:00 LPR1-CSMT-Comp12 12:26 LPR2-CSMT-Comp16 11:27 LPR6-CSMT-Comp39 11:46 LPR2-CSMT-Comp22 11:07 LPR2-CSMT-Comp23 06:50 LPR6-CSMT-Comp23 09:24 LPR3-CSMT-Comp40 09:24 LPR3-CSMT-Comp40 2) Released by: Company: Date/Time: Rec'd by:	Jennifer Parker Windward Environmental LLC # of Containers	Shipper: Form filled out by:	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker Jennifer Je	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker/Dianne Ji	Jennifer Parker Windward Environmental LLC	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker/Dianne Janak Turnar	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker/Dianne Janak Turnaround requested (check test(s) required)	

Ward Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 To be completed by Laboratory upon sample receipt:

Pate of receipt:: 4/15/10	Laboratory W.O. #: 1016012
Conditien upon receipt: 900cl	Time of receipt: 930
Cooler temperature: -7.50	Received by: Katie Jahanmi

2	of	3
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Passaic RI/FS Tissue

Project/Client Name:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Brooks Rand Labs

1016012

LPR-BRL-MT-B

Project Number: 09.58.02.31		Attn:		Misty Kennard-Mayer				Shipping Date: 4/14/2010				
Contact Name:	Je	ennifer Par	ker	Shi	pper:	UPS				Airbill Number: 12 196 186 01 4298 38		
Sampled By:	Sampled By: Windward Environmental LLC		nvironmental LLC	Form filled out by:		Jennifer Parker/Dianne Janak				Turna	Turnaround requested: Standard	
							est(s) Reque	sted (check te	est(s) required)			
Sample Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Co	mments / Instructions [Jar tag number(s)]
8/27/2009	07:17	LPR6-CSI	MT-Comp43	11	Tissue	Х	Х	Х				
8/15/2009	7:00	LPR3-CSI	MT-Comp29	1	Tissue	. Х	Х	X				
8/20/2009	12:20	LPR5-CSI	MT-Comp36	1	Tissue	Х	Х	Х				
8/26/2009	11:38	LPR7-CSI	MT-Comp47	1	Tissue	Х	Х	X				
8/27/2009	08:55	LPR7-CSI	MT-Comp51	1	Tissue	Х	Х	Х				
9/9/2009	08:56	LPR8-CSI	MT-Comp59	1	Tissue	Х	Х	Х				
9/9/2009	08:47	LPR8-CSI	MT-Comp60	1	Tissue	Х	Х	Х				
9/10/2009	13:02	LPR8-CSI	MT-Comp62	1	Tissue	Х	Х	Х				
9/1/2009	13:10	LPR1-CSI	MT-Comp05	1	Tissue	. X	Х	X				
9/3/2009	11:10	LPR1-CSI	MT-Comp09	1	Tissue	Х	X	Х				
	າ	Total Num	ber of Containers	10 of 21	Purchase Ord	er / Statem	ent of Wo	rk # BRL09_0	01LPR			
1) Released by: Company: Rec g by: Company: Date/Time: Date/Time:	132 132 15/10 2L	930	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released I Company: Date/Time: Rec'd by: Company: Date/Time:	by:	-	Windw date an collectrompo togeth onsite Analyti	ual specimens were collected by ard Environmental. The collection and time corresponds to the earliest ed individual specimen within the site. Specimens were grouped er into composites by Windward at Alpha Analytical. Alpha cal processed and homogenized nposites; therefore, samples are d by Alpha Analytical.

Ward Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

To be compl	leted by Laboratory upon sample receipt:							
Date of reteipt:: 4 5 10	Laboratory W.O. #: 1014012							
Condition upon receipt: 0000	Time of receipt: 930							
Cooler temperature: -7.50	Received by: Katic Jahan Mir							

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Brooks Rand Labs

Project Number: 09.58.02.31 Contact Name: Jennifer Parker			Attn:	Attn: Shipper:		Misty Kennard-Mayer UPS				Shipping Date: 4/14/2010 Airbill Number: 72 (9E) 8E 01 4) 98 384		
Sampled By:		ndward Environmental LLC		n filled out by:		er Parker	/Dianne Ja	nak		oill Number: 12 19E18E 01 4298 38 naround requested: Standard		
Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Methylmercury (1630)	Total Mercury (s) (1631)	Inorganic (1632) Arsenic (1632)	est(s) required)		Comments / Instructions [Jar tag number(s)]		
9/2/2009	14:13	LPR2-CSMT-Comp21	1	Tissue	Х	Х	Х			[
	·				-							
.1.	<u>-</u>	Total Number of Containers	1 of 21	Purchase Ord	er / Statem	l ent of Wo		01LPR				
1) Released by: Company: Date/Time: Company: Date/Time:	nro J DIAD	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released In Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.		



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	To be compr	eted by caporatory upon sample receipt:
Date of receipt:: 4	15/10	Laboratory W.O. #: 1016012
Condition upon receipt:		Time of receipt: 930
Cooler temperature:	7.56	Received by: Katic Jahanmir

#LPR-BRL-MT-C

10	f <u>1</u>	CHA	IN-OF	-CUSTO	DY/1	TEST	REQUI	ST FO	RM	
Project/Client Na	ame: P a	assaic RI/FS Tissue		То:	В	rooks Ra	nd Labs		COC reference # LPR-BRL-RB3	
Project Number:				Attn:	M	listy Kenn	ard-Mayer		Shipping Date: 06/08/2010	
Contact Name:		ennifer Parker		Shipper:	UPS				Airbill Number: 121961860141	970
Sampled By:	V	/indward Environmental LLC		Form filled out by:	Je	ennifer Pa	rker/Ellen (Collins	Turnaround requested: Standard	
						rest(s) Requ	ested (check te	est(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			
6/8/2010	13:30	LPR-060810-RB	3	Water	Х	Х	Х		Comments / Instructions [lar tag number(s)]	
-										
						,				
					· · · · · · · · ·					
	<u> </u>	Total Number of Containers	3	Purchase Ord	er / State	ement of \	Nork # BRLO	9_01LPR		
1) Released by:	H	2) <u>Released by:</u>		3) Released by:			NOTES			
Company		Company:		Company:						
Date/Time:		Date/Time:		Date/Time:						
6/8/// Rec'd/by:	0 14.	Rec'd by:		Rec'd by:						
\ \ \ \ \ \ \ \	PS 12									
Company: Date/Time:	B	Company: Date/Time:		Company: Date/Time:						

To be completed by Laboratory upon sample receipt:					
Date of receipt:: 6 A (0	Laboratory W.O. #: 1024008				
Condition upon receipt: 4000	Time of receipt: 930				
Cooler temperature: 5.0	Received by: Katie Tahanmur				

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	To:	Brooks Rand Labs	COC reference	# LPR-BRL-PI-A
Project Number:	09.58.02.31	Attn:	Misty Kennard-Mayer	Shipping Date:	06/09/2010
Contact Name:	Jennifer Parker	Shipper:	UPS	Airbill Number:	12 19EIRF 01 4223 493
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak		uested: Standard

					Te	est(s) Reque	sted (check to	est(s) required)
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)	
8/25/2009	9:54	LPR6-ELFT-Ind001	1	Tissue	Х	Х	X	Comments / Instructions [lar tag number(s)]
9/19/2009	9:35	LPR5-MSFT-Comp01	1	Tissue	X	X	X	
9/8/2009	10:09	LPR8-MSFT-Ind002	ì	Tissue	X	X	X	- w
9/18/2009	10:35	LPR5-MSFT-Ind009	1	Tissue	X	X	X	à M
9/18/2009	13:50	LPR4-MDFT-Comp01	1	Tissue	Х	Х	X	0,000
9/18/2009	10:35	LPR5-MDFT-Comp02	1	Tissue	X	X	X	No tello
9/10/2009	8:40	LPR8-MDFT-Comp03	1	Tissue	X	X	X	
8/25/2009	9:54	LPR6-ELCT-Ind001	1	Tissue	X	X	X	40/0
9/19/2009	9:35	LPR5-MSCT-Comp01	1	Tissue	X	X	X	7 (%))
9/8/2009	10:09	LPR8-MSCT-Ind002	1	Tissue	<u> </u>	<u> </u>	<u> </u>	
		Total Number of Containers	10	Purchase Or	der / State	ment of V	Vork # BRLC	09_01LPR
1) Released by: Company: Date/Fire Rec d by: Company: Date/Time:	1305 1305	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Specimens Analytical. therefore,	specimens were collected by Windward Environmental. The collection date orresponds to the earliest collected individual specimen within the composite. were grouped together into composites by Windward onsite at Alpha Alpha Analytical processed and homogenized the individuals and composites; samples are released by Alpha Analytical. Sample names indicate whether the an individual (Ind) or composite (Comp).

warren warrender warren sp	
	d/X/ard
VV II.	environmental LLC
_	environmental

To be comple	eted by Laboratory upon sample receipt:							
ate of receipt:: $G \{ O \{ O \} \}$	Laboratory W.O. #: 1024008							
ondition upon receipt: QOOO	Time of receipt:							
ooler temperature: 1.0 C	Received by: Katic Jahanni							

2	of	2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				- · · · · · · · · · · · · · · · · · · ·	To:			ind Labs		COC	COC reference: # LPR-AA-PI-B		
Project Number: 09.58.02.31 Contact Name: Jennifer Parker			1	Attn:	tn: Misty Kennard-Mayer				Shipping Date: 06/09/2010				
				Shipper:		PS			Airb	oill Number:	12 19E18E 6	1 422349	
Sampled By:		Vindward	Environmental LLC		Form filled out by:		Jennifer Parker/Dianne Janak				Turnaround requested: Standard		
						Test(s) Requested (check test(s) required)							
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)					
9/18/2009	10:35	LPR5-N	ASCT-Ind009	1	Tissue	Х	Х	Х			F	nments / Instruction [Jar tag_number(s)]	ons
9/18/2009	13:50	LPR4-N	ADCT-Comp01	1	Tissue	Х	Х	Х				ластаў пинілецзуі	
9/18/2009	10:35			Tissue	Х	Х	Х				J.		
9/10/2009			1	Tissue	Х	Х	Х			,	7.10		
											a on	1,201,	0
										1		10/12 M	
												W/	
						ļ					XX))	
									ļ		3		
							ŀ						
		Total Nui	mber of Containers	4	Purchase Ord	der / State	ment of V	Work # BRL	.09_01LPR			<u></u>	
1) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Compa Date/Time: Date/T Rec'd by: Rec'd		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	3) Released by: Company: Date/Time: Rec'd by: Company:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).				e composite. Npha composites; whether the	
								To be	completed	by Lab	oratory up	on sample rec	eipt:



	tien by Laboratory apon bampic receipt.
Date of receipt:: (p/(0/(0	Laboratory W.O. #: 1024008
Condition upon receipt: 4000	Time of receipt:
Cooler temperature:	Received by: Patie Jahanmir

1 0	f <u>1</u>	CHA	IN-OF	-CUSTO	DY/1	TEST I	REQU	EST FO	DRM		
Project/Client Name: Passaic RI/FS Tissue Project Number: 09.58.02.31				То:	В	rooks Ra	nd Labs		COC reference # LPR-BRL-RB4		
				Attn:	M	isty Kenn	ard-Mayer		Shipping Date: 06/15/2010		
Contact Name:	J	ennifer Parker		Shipper:	<u>U</u>	PS			Airbill Number: 1219E18E 01 4189		
Sampled By:		Vindward Environmental LLC		Form filled out by:		ennifer Pa	rker/Ellen	Collins	Turnaround requested: Standard		
						est(s) Reque	ested (check t	est(s) required)			
Sample Collection Date (m/d/y)	* Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		·		
6/15/2010	14:15	LPR-061510-RB	3	Water	. X	Х	Х		Comments / Instructions [Jar tag pumber(s)]		
		Total Number of Containers	3	Purchase Ord	der / State	ement of V		09_01LPR			
1) Released by: Ompany: Date/Fime: Red d by: Company: Date/Time:	HA 1450 BRL	Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:		•	NOTES				

Ward environmental LLC

To be comple	eted by Laboratory upon sample receipt:
Pate of receipt:: 6 10 10	Laboratory W.O. #: [025019
Condition upon receipt: GODA	Time of receipt: 900
ooler temperature: 6.2	Received by: Katie Jahannir

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Nar	me: P a	assaic RI/I	FS Tissue	T	o:	Br	ooks Rai	nd Labs		CO	COC reference # LPR-BRL-CF-A		
Project Number:	: 09	9.58.02.31			Attn:	Mi	Misty Kennard-Mayer				oping Date:	06/16/2010	
Contact Name:	Je	ennifer Par	ker		UF	UPS				Airbill Number: 1719E18E014327.5			
Sampled By:		/indward E	nvironmental LLC	F	orm filled out by	: Je	nnifer Par	rker/Diann	e Janak	Tur	naround req	uested: Standa	rd
					1		···				1		
							est(s) Reque	sted (check t	est(s) required)		1		
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)					
8/11/2009	9:25	LPR3-C	CFT-Ind001	1	Tissue	X	X	X				omments / Instruct [lar tag_number(s	
8/15/2009	8:50	LPR3-C	CFT-Ind004	1	Tissue	Х	X	X					
8/25/2009	9:54	LPR6-C0	CFT-Ind032	1	Tissue	X	X	X					
8/27/2009	9:01	LPR7-C	CFT-Ind068	1	Tissue	X	X	X					
8/28/2009	9:32	LPR7-C	CFT-Ind092	1	Tissue	Х	X	X					
8/29/2009	8:10	LPR6-C	CFT-Ind104	1	Tissue	X	X	X					
9/8/2009	7:48	LPR8-C	CFT-Ind121	1	Tissue	X	X	X					
9/9/2009	9:15	LPR8-C	CFT-Ind131	1	Tissue	X	Х	X					
9/17/2009	10:49	LPR4-C	CFT-Ind155	1	Tissue	X	Х	X					
9/17/2009	11:05	LPR4-C	CFT-Ind156	1	Tissue	X	X	X					
	າ	Total Num	ber of Containers	10 of 12	Purchase Ord	der / State	ment of V	Vork # BRLO)9_01LPR				
1) Released by:	J.		2) Released by:		3) Released by:			and time o	orresponds to the	e earliest c	ollected indivi	nvironmental. The collection within the coll	the composite.
Company:				Company:							by Windward onsite at ized the individuals ar		
Date/Time:	15%	5	Date/Time:		Date/Time:				erefore, samples are released by Alpha Analytical. Sample names indicate whether the mple is an individual (Ind) or composite (Comp).				
Rec'd by:			Rec'd by:		Rec'd by:		Sample is a	in maividuai (ma,	or compo	site (Comp).			
UP	52												
Company: Date/Time: Company: Date/Time:			Company: Date/Time:										
								To be	completed	by Lab	oratory ı	ipon sample re	eceipt:

Ward Ward environmental LLC

Date of receipt:: 6/17/10	Laboratory W.O. #: [0.56 9
ondition upon receipt: 0000	Time of receipt:
Cooler temperature: 0 , θ C	Received by: Kate Jahanmir

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					Br	Brooks Rand Labs				C reference:	# LPR-BRL-CF-B	
Project Number: 09.58.02.31 A				Attn: Misty Kennard-Mayer				Ship	oping Date:	06/16/2010		
Contact Name:	Je	nnifer Par	ker		Shipper:	PS		•	Airb	oill Number:	1219E18E014327	
Sampled By:	Wi	indward E	nvironmental LLC	F	Form filled out by:	: Je	nnifer Pai	rker/Diann	e Janak	Tur	naround requ	ested: Standard
							est(s) Reque	sted (check t	est(s) require	d)		
Sample Collection Date (m/d/y)	Time	Sam	nple Identification	# of Containers	Matrix	Methyimercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)				
9/19/2009	11:00	:00 LPR5-CCFT-Ind181 1			Tissue	Х	Х	Х		P	i	mments / Instructions [lar tag number(s)]
9/19/2009	11:33		CFT-Ind184	1	Tissue	Х	Х	Х				t
						•						
	•	Total Num	ber of Containers	2 of 12	Purchase Ord	ler / State	ment of V	Vork # BRL	09_01LPR			
1) Released by	1) Released by:				3) Released by:							ironmental. The collection date all specimen within the composite.
Company: Company:		Company:		Company:				were grouped	together into	o composites by	/ Windward onsite at Alpha	
Date/Jime:		Date/Time:			Date/Time:			therefore,	Alpha Analytica samples are rel	ai processed eased by Alp	and nomogeniz ha Analytical. S	ed the individuals and composites; ample names indicate whether the
6/16/10 -76-18 Bec'd.by:		5	Rec'd by:	1	Rec'd by:	·			an individual (Ir			
Company: Company: 617/10 900 Date/Time: 617/1			0 900 BRL	Company: Date/Time:								
								Tala		d by Lab		an comple receipts



To be compi	cted by Edboratory apon sample receipt.
Date of receipt:: 6/17/16	Laboratory W.O. #: 1025019
Jale of receipt 6/17/10	[0250()]
Condition upon receipt: 9000	Time of receipt: 900
Cooler temperature: 0, 80	Received by: Katie Tahanmir

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: Pa	ssaic RI/FS Tissue		В	ooks Ra	nd Labs		COC reference: # LPR-BRL-WB-B			
Project Number:	_09	.58.02.31	Attn: Misty Kennard-Mayer						Shipping Date: 06/16/2010		
Contact Name:	Je	nnifer Parker		Shipper:	UPS				Airbill Number: 1219E18E 01 4252 8		
Sampled By:	W	indward Environmental LLC		Form filled out by	: Je	nnifer Pa	rker/Dianne	Janak	Turnaround requested: Standard		
	1	1	<u>. </u>								
							sted (check te	t(s) required)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		Comments / Instructions [Jar tag number(s)]		
9/18/2009	13:50	LPR4-CCWB-Ind175	1	Tissue	Х	Х	Х				
9/19/2009	12:10	LPR4-CCWB-Ind186	. 1	Tissue	X	Х	X-				
8/12/2009	9:27	LPR3-ANWB-Ind001	1	Tissue	Χ	Х	Х				
8/28/2009	8:05	LPR6-ANWB-Ind004	1	Tissue	Х	Х	Х				
9/16/2009	10:08	LPR4-ANWB-Ind007	1	Tissue	Х	Х	Х				
8/28/2009	7:24	LPR6-ANWB-Ind003	1	Tissue	Х	Х	Х				
8/29/2009	11:01	LPR6-ANWB-Ind005	1	Tissue	Х	Х	Х				
8/29/2009	11:44	LPR7-ANWB-Ind006	1	Tissue	Х	Х	Х				
	7	Total Number of Containers	8 of 18	Purchase Ord	er / State	ment of V	ork # BRLO	9_01LPR			
1) Released by: Light Mark Company: Date/Time: Rec'd by: Company:	1630	2) Released by: Company: Date/Time: Rec'd by: Company:		3) Released by: Company: Date/Time: Rec'd by: Company:	and time corresponds to the Specimens were grouped to Analytical. Alpha Analytical			responds to the rere grouped tog pha Analytical pi mples are release	collected by Windward Environmental. The collection date a earliest collected individual specimen within the composite gether into composites by Windward onsite at Alpha processed and homogenized the individuals and composite sed by Alpha Analytical. Sample names indicate whether the or composite (Comp).		
Date/Time:		Date/Time:		Date/Time:							



, To be compi	leted by Laboratory upon sample receipt:						
Date of receipt:: 6 (7 / 10	Laboratory W.O. #: 1025019						
Condition upon receipt: 9000	Time of receipt:						
Cooler temperature: 7-12C	Received by: Kate Jahanmi/						

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	me: P	assaic RI/	FS Tissue		Го:	Br	ooks Rai	nd Labs		coc	reference	# LPR-BRL-WB	-A
Project Number:	_0:	9.58.02.31			Attn:			ard-Mayer		Ship	ping Date:	06/16/2010	
Contact Name:	<u>_</u>	ennifer Par	ker		Shipper:			UPS				1219E18E0142	52 821
Sampled By:		/indward E	nvironmental LLC	F	orm filled out by		Jennifer Parker/Dianne Janak				around requ	uested: Standard	
					<u> </u>					-	·····		
							est(s) Reque I		test(s) required)				
Sample Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		j	Co	omments / Instructions [Jar tag number(s)]	
8/11/2009	9:25	LPR3-CC	WB-Ind002	1	Tissue	Х	Х	Х					
8/15/2009	8:50	LPR3-CC	WB-Ind005	1	Tissue	Х	Χ.	Х					
8/19/2009	10:03	LPR5-CCWB-Ind011		1	Tissue	Х	Х	Х					,
8/25/2009	7:30	LPR6-CC	LPR6-CCWB-Ind021		Tissue	Χ	Х	Х					
8/25/2009	8:43	LPR6-CC	LPR6-CCWB-Ind028		Tissue	Χ	Х	Х					
8/25/2009	11:33	LPR7-CC	LPR7-CCWB-Ind042		Tissue	Х	Х	X					
8/27/2009	9:01	LPR7-CC	WB-Ind069	1	Tissue	X	Х	Х					
9/12/2009	7:58	LPR8-CC	WB-Ind139	1	Tissue	X	Х	Х					
9/12/2009	10:57	LPR8-CC	WB-Ind147	1	Tissue	Х	Х	Х					
9/18/2009	10:35	LPR5-CC	WB-Ind160	1	Tissue	Х	X	Х					
		Total Num	ber of Containers	10 of 18	Purchase Ord	ler / State	ment of W	Vork # BRL	09_01LPR				
1) Released by: Company Company: Date/Time: Rec'd by: Company: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).					
								To be	completed h	v Lab	oratory 11	pon sample recei	mt:



	tion by the control of the control o
Date of receipt:: 6 17 10	Laboratory W.O. #: 1025019
Condition upon receipt: θ oo ϕ	Time of receipt: \widehat{Q} $\widehat{\mathcal{M}}$
Cooler temperature: -12c	Received by: Katil Tahanmir

oject/Client Name: Passaic RI/FS Tissue				То:	В	rooks Ra	nd Labs		COC reference	# LPR-BRL-RB5
roject Number:	_09	0.58.02.31		Attn:	_M	isty Kenn	ard-Mayer		Shipping Date:	06/29/2010
ontact Name:	Je	nnifer Parker				PS			Airbill Number:	1219E18E 014285729
ampled By:	_Wi	indward Environmental LLC	Form filled out by:	Je	ennifer Pa	arker/Ellen	Collins	Turnaround requested: Standard		
						est(s) Requ	ested (check t	est(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			
6/29/2010	10:40	LPR-062910-RB	3	Water	X	Х	Х			omments / Instructions _[lar tag number(s)]
	7	Total Number of Containers	3	Purchase Orde	er / State	ment of \	Nork # BRL	09_01LPR	•	
Released by:	11	2) Released by:		3) Released by:			NOTES			
Company:	1	Company:		Company:						
Date/Time:	14/35	Date/Time:		Date/Time:				•		ľ
Rec'd by:	1700	Rec'd by:		Rec'd by:						
Company: Date/Time:		Company: BRC Date/Time: 4/30/10	- 900	Company: Date/Time:						



Date of receipt:: \mathcal{C} $ \mathcal{W} $	10	Laboratory W.O.#: しっと子っしろ
Condition upon receipt: 0	100cl	Time of receipt: Q 00
Cooler temperature:	50	Received by: Katie Jahanmir

of 2	1
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Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Brooks Rand Labs

LPR-BRL-CATC-A

COC ref erence

Project Number:	Ta	ask 16.1 (09.58.02.31)		Attn:	_Mi	sty Kenn	ard-Mayer		Shipping Date: 07/06/2010			
Contact Name:	_Je	nnifer Parker		Shipper:	UPS					Airbill Number: 12.19.618.6.01.42.74.25		
Sampled By:	_W	indward Environmental LLC		Form filled out by:	Je	nnifer Pa	rker/Diann	e Janak		naround requested: Standard		
					Test(s) Requested (check test(s) required)							
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]		
9/12/2009	9:35	LPR8-WSCT-Ind009	1	Tissue	X	Х	Х					
9/12/2009	11:16	LPR8-WSCT-Ind013	1	Tissue	Х	Х	Х					
9/15/2009	8:34	LPR5-WSCT-Ind019	1	Tissue	Х	Х	Х					
9/18/2009	11:57	LPR5-WSCT-Ind020	1 .	Tissue	X	Х	Х					
9/18/2009	14:10	LPR4-WSCT-Ind023	1	Tissue	Х	Х	Х					
8/18/2009	8:15	LPR5-IPCT-Ind001	1	Tissue	Х	Х	Х					
8/25/2009	7:17	LPR6-IPCT-Ind003	1	Tissue	Х	Х	Х					
8/26/2009	8:29	LPR6-IPCT-Ind004	1	Tissue	Х	Х	Х					
8/26/2009	10:18	LPR7-IPCT-Ind005	1	Tissue	Х	Х	Х					
8/27/2009	9:34	LPR7-IPCT-Ind006	1	Tissue	Х	Х	Х					
	-	Total Number of Containers	10 of 35	Purchase Ord	er / State	ment of V	Vork # BRL0	9_01LPR				
1) Released by: Company: Date/Time: Company: Date/Time:	2) Released by: Company: Company: Date/Time: 2) Released by: 3) Released by: Company: Company: Date/Time: NOTES Individual sand time of Specimens Analytical. therefore, sand time:					orresponds to the were grouped tog Alpha Analytical p	earliest co gether into rocessed a ed by Alph	Windward Environmental. The collection date llected individual specimen within the composite. composites by Windward onsite at Alpha nd homogenized the individuals and composites; a Analytical. Sample names indicate whether the ite (Comp).				
							To be	completed	by Lab	oratory upon sample receipt:		



late of receipt:: $7/8(0)$	Laboratory W.O. #: 1028 015
ondition upon receipt: 5.8 5.9 C	Time of receipt: 900
ooler temperature: $QOOC$	Received by: Katic Jahanmir
	

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	me: P	assaic Ri	FS lissue	<u> </u>	To:	B	rooks Ra	nd Labs		COC reference: # LPR-BRL-CATC-B		
Project Number:	T	ask 16.1 (09.58.02.31)		Attn:	М	isty Kenna	nard-Mayer Shipping Date: 07/06/2010				
Contact Name:	_Je	ennifer Pa	rker		Shipper:					Airbill Number: 1219E18E 01 4/1/2 7		
Sampled By:	<u>. W</u>	indward E	Environmental LLC		Form filled out by:			rker/Diann	e Janak	Turnaround requested: Standard		
					T							
							est(s) Reque	sted (check t	est(s) required)			
Sample Collection Date (m/d/y)			# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		Comments / Instructions [Jar tag number(s)]			
9/9/2009	9:15	LPR8-IPC	T-Ind008	1	Tissue	Х	Х	X				
9/9/2009	9:15	LPR8-IPC	T-Ind009	1	Tissue	X	Х	Х				
9/10/2009	13:02	LPR8-IPCT-Ind010		1	Tissue	Х	Х	Х				
9/10/2009	13:02	LPR8-IPCT-Ind011		1	Tissue	Х	Х	Х				
9/10/2009	13:02	LPR8-IPC	LPR8-IPCT-Ind012		Tissue	X	X	Х				
9/10/2009	13:02	LPR8-IPC	LPR8-IPCT-Ind013		Tissue	X	X	Х				
8/11/2009	11:08	LPR3-AC	CT-Ind001	1	Tissue	Х	X	Х				
8/11/2009	11:30	LPR3-AC	CT-Ind002	1	Tissue	Х	Х	Х				
8/13/2009	10:26	LPR3-AC	CT-Ind003	11	Tissue	Х	X	X				
8/14/2009	9:04	LPR3-AC	CT-Ind005	1	Tissue	Х	Х	X				
		Total Num	ber of Containers	10 of 35	Purchase Ord	ler / State	ment of W	ork # BRL	09_01LPR			
2) Released by: Company: Date/Time: Company: Company: Company: Date/Time: Company: Date/Time: Date/Time:			900	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s	orresponds to the ear were grouped togeth Alpha Analytical proce	ted by Windward Environmental. The collection date liest collected individual specimen within the composite. For into composites by Windward onsite at Alpha essed and homogenized the individuals and composites; by Alpha Analytical. Sample names indicate whether the omposite (Comp).			

Ward

To be compl	pleted by Laboratory upon sample receipt:							
Date of receipt:: H_8 10	Laboratory W.O. #: (028015							
Condition upon receipt: 900d	Time of receipt: Q 50							
Cooler temperature: 5,8/5,90	Received by: Katie Tahanmir							

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					To: Brooks R					CO	C reference:	# LPR-BRL-CATC-C
Project Number:	_Ta	ısk 16.1 (0	9.58.02.31)		Attn: Misty Kenna			ard-Mayer	rd-Mayer Shipping Date: 07/06/2010			
Contact Name:	_Je	nnifer Par	ker	9	Shipper:	UF	UPS					1219ETBE 014112 79 014274 25
Sampled By:	Wi	Windward Environmental LLC F			orm filled out by:	Jennifer Parker/Dianne Janak				Turnaround requested: Standard		
					T							
						-	st(s) Reque	sted (check t	est(s) required)		4	
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			C	Comments / Instructions [Jar tag number(s)]
8/19/2009	10:51	LPR5-ACC	CT-Ind006	1	Tissue	Х	Х	Х				
8/25/2009	8:25	LPR6-ACC	CT-Ind008	1	Tissue	Х	Х	Х				
8/25/2009	8:25	LPR6-ACC	T-Ind009	1	Tissue	Χ	Х	Х				
8/26/2009	7:55	LPR6-ACC	T-Ind010	1	Tissue	Χ.	Х	Х				
8/27/2009	7:27	LPR6-ACC	CT-Ind013	1	Tissue	Х	Х	Х				
8/27/2009	9:48	LPR7-ACC	CT-Ind014	1	Tissue	Х	Х	Х				
8/29/2009	11:11	LPR6-ACC	LPR6-ACCT-Ind016		Tissue	Х	Х	Х				
8/29/2009	12:06	LPR7-ACC	CT-Ind017	1	Tissue	Х	Х	Х				
9/2/2009	14:13	LPR2-ACC	CT-Ind018	1	Tissue	Х	Х	Х				
9/8/2009	8:04	LPR8-ACC	T-Ind019	1	Tissue	Χ	Х	Х				
	7	Total Num	ber of Containers	10of 35	Purchase Ord	er / Stater	nent of W	ork # BRL	09_01LPR			
1) Released by: Company Date/Vimer Rec d by: Company: Date/Time:	Company: Company: Date/Time: Rec'd by: Company: Company: Company: Company:) 0 21.90b	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s	orresponds to the were grouped tog Alpha Analytical pr	earliest co ether into ocessed a ed by Alpl	ollected individual o composites land homogen ha Analytical.	nvironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha ized the individuals and composites; Sample names indicate whether the
								To be	completed I	ov Lah	oratory i	mon sample receipt:

<u> </u>	e compre	eted by Laboratory upon sample receipt:
Date of receipt:: 7/8/10		Laboratory W.O. #: 10256015
Condition upon receipt: 5 900c		Time of receipt:
Cooler temperature: 5.8 5.7 C		Received by: Katic Jahanmir

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue			То:		ooks Ra	nd Labs		COC reference: # LPR-BRL-CATC-D			
Project Number: Task 16.1 (09.58.02.31)				Attn: Misty Kenr			ard-Mayer			pping Date: 07/06/2010	
Contact Name: Jennifer Parker Sampled By: Windward Environmental LLC			Shipper:	UI	PS				oill Number: 12196786 014112 79		
			Form filled out by:						naround requested: Standard		
							est(s) Reque	ested (check	test(s) required)		
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			Comments / Instructions [Jar tag number(s)]
9/8/2009	8:44	LPR8-AC	CCT-Ind020	1	Tissue	Х	Х	Х			
9/8/2009	8:44	LPR8-AC	CCT-Ind021	1	Tissue	X	Х	Х			
9/10/2009	13:02	LPR8-AC	CCT-Ind022	1	Tissue	Х	Х	Х			
9/17/2009	11:05	LPR4-AC	CCT-Ind023	1	Tissue	Χ	Х	Х			
9/18/2009	11:15	LPR5-AC	CCT-Ind024	1	Tissue	Х	Х	Х			
	·										
ļ											
									<u> </u>		
<u> </u>		Total Nun	nber of Containers	5 of 35	Purchase Ord	er / State	ment of W	ork # BRL	09_01LPR		
1) Released by:	4	,	2) Released by:		3) Released by:						Windward Environmental. The collection date llected individual specimen within the composite.
Company:			Company:			Specimens	Specimens were grouped together into composites by Windward onsite at a Analytical. Alpha Analytical processed and homogenized the individuals and				
Date/Time:	1640)	Date/Time:	•	Date/Time:			therefore,	samples are relea:	sed by Alph	a Analytical. Sample names indicate whether the
Rec'd by:	2		Rec'd by:	<i>></i>	Rec'd by:			sample is a	an individual (Ind)	or compos	ite (Comp).
Company: Date/Time:			Company: BRC Date/Time: AN	2	Company: Date/Time:		<u> </u>				
								To be	completed	by Labe	aratory upon cample receipts

Ward Ward environmental LLC

Pate of receipt:: \mathcal{H} 8 [ℓ 0	Laboratory W.O. #: 1026015
ondition upon receipt: $\rho o d$	Time of receipt: 650
ooler temperature: 58/5.9 C	Received by: Ratic Jahanmi

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1028033

<u> </u>					-						
Project/Client Na	me: Pa	ssaic RI/FS Tissue	7	Го:	Ві	ooks Rai	nd Labs		COC ref erer	nce # LPR-BRL-(CATF-A
Project Number:	Ta	ısk 16.1 (09.58.02.31)		Attn:	Mi	isty Kenna	ard-Mayer		Shipping Date: 07/08/2010		
Contact Name: Jennifer Parker Sampled By: Windward Environmental LLC			Shipper:	UI	PS			Airbill Number: 1219E18E 01 4298 3 Turnaround requested: Standard			
		F	Form filled out by:	Je	nnifer Pai	ker/Diann	e Janak				
					Ţ	est(s) Reque	sted (check t	est(s) required)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)				
9/12/2009	9:35	LPR8-WSFT-Ind009	1	Tissue	X	Х	Х			Comments / Instruction [Jar tag number(s)]	
9/12/2009	11:16	LPR8-WSFT-Ind013	1	Tissue	Х	Х	X			(rai ray rumper(s))	
9/15/2009	8:34	LPR5-WSFT-Ind019	1	Tissue	X	Х	Х			,	
9/18/2009	11:57	LPR5-WSFT-Ind020	1	Tissue	Х	Х	Х				
9/18/2009	14:10	LPR4-WSFT-Ind023	1	Tissue	Х	Х	X				
8/18/2009	8:15	LPR5-IPFT-ind001	1	Tissue	Χ	Х	X				
8/25/2009	7:17	LPR6-IPFT-Ind003	1	Tissue	Χ	Х	Х				
8/26/2009	8:29	LPR6-IPFT-Ind004	1	Tissue	Χ	Х	Х				
8/26/2009	10:18	LPR7-IPFT-Ind005	1	Tissue	Χ	Х	X				

Χ

Total Number of Containers

9:34

3) Released by:

10 of 35

NOTES

Χ

Χ

Purchase Order / Statement of Work # BRL09_01LPR

1) Released by:

Company

Date/Time:

1240

Company:

Rec'd by:

2) Released by:

LPR7-IPFT-Ind006

Company:

Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).

UPS Company:

Date/Time:

8/27/2009

Company: BRL Date/Time: Rec'd by:

Tissue

Company: Date/Time:

To be completed by Laboratory upon sample receipt:

	Ward
A A A	environmental LLC
	Civilonnicinai

Cooler temperature: 6.0 C	Received by: Katie Jahanmi,
Condition upon receipt: 900 d	Time of receipt: 900
1 (TV) Y	(020033
Pate of receipt:: 7/4/10	Laboratory W.O. #: 1028633

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Project Number: Contact Name: Passaic RI/FS Tissue Task 16.1 (09.58.02.31) Jennifer Parker		To: Attn: Shipper:		Br	ooks Rar	nd Labs		COC reference: # LPR- BRL-CATF-B				
				Misty Kennard-Mayer				Shipping Date: 07/08/2010				
				UF	es			Airb	ill Number: 121908E01 4298 388			
Sampled By:	W	indward Environmental LLC	F	Form filled out by:		Jennifer Parker/Dianne Janak				Turnaround requested: Standard		
				,								
-						est(s) Reque	sted (check t	est(s) required)				
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)					
9/9/2009	9:15	LPR8-IPFT-Ind008	1	Tissue	Х	Х	Х			Comments / Instructions [lar tag number(s)]		
9/9/2009	9:15	LPR8-IPFT-Ind009	1	Tissue	Х	Х	X			, ,		
9/10/2009	13:02	LPR8-IPFT-Ind010	1	Tissue	Х	Х	Х					
9/10/2009	13:02	LPR8-IPFT-Ind011	1	Tissue	Χ	X	X					
9/10/2009	13:02	LPR8-IPFT-Ind012	1	Tissue	Χ	X	X					
9/10/2009	13:02	LPR8-IPFT-Ind013	11	Tissue	X	X	X					
8/11/2009	11:08	LPR3-ACFT-Ind001	1	Tissue	X	X	X	ļ				
8/11/2009	11:30	LPR3-ACFT-Ind002	1	Tissue	Χ	X	X					
8/13/2009	10:26	LPR3-ACFT-Ind003	1	Tissue	X	Х	X					
8/14/2009	9:04	LPR3-ACFT-Ind005	1	Tissue	X	X	X					
•		Total Number of Containers	10 of 35	Purchase Orc	ler / State	ment of V	Vork # BRL	.09_01LPR				
1) Released by: // Company: Date/Time: Company: Date/Time:	L 1240	2) Released by: Company: Date/Time: Rec'd by: Company: BRL Date/Time: 7/a [1]	>^* o 900	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Speciment Analytical, therefore, sample is	corresponds to the swere grouped t Alpha Analytical samples are relea an individual (Inc	e earliest c ogether int processed ased by Alp I) or compo			
							To be	e completed	d by Lat	poratory upon sample receipt:		

Ward

Date of receipt:: $7/4/10$	Laboratory W.O. #: 10 2 86 3 3
Condition upon receipt: 900d	Time of receipt: 400
Cooler temperature: S . (1) C	Received by: Katie Tahanmir
	MAIC JOURNALINA

Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC Sample Identification LPR5-ACFT-Ind006		Attn: Shipper: Form filled out by	UF : Je	nnifer Pa		e Janak est(s) required)	Airb	oping Date: 07/08/2010 oill Number: 1219618601 4298 388 naround requested: Standard	
Windward Environmental LLC Sample Identification	# of	Form filled out by	: Je	nnifer Pa est(s) Reque	sted (check te			ill Number: 12196186014298 388 naround requested: Standard	
Sample Identification	# of		Te	est(s) Reque	sted (check te		Turn	naround requested: Standard	
	1					est(s) required)			
	1					est(s) required)			
	1		ıylmercur))	ercury	1632)				
LPR5-ACFT-Ind006		Matrix	Meth (1630	Total Mercury (1631)	Inorganic Arsenic (1632)				
EI NO / CIT III acco	1 1	Tissue	Х	Х	Х			Comments / Instructions	
LPR6-ACFT-Ind008	1	Tissue	Х	Х	X			[lar tag number(s)]	
	1	Tissue	X	Х	X				
	1	Tissue	Х	Х	Х				
LPR6-ACFT-Ind013	1	Tissue	Х	Х	Х				
LPR7-ACFT-Ind014	1	Tissue	Х	Х	Х				
LPR6-ACFT-Ind016	1	Tissue	Х	Х	X				
LPR7-ACFT-Ind017	1	Tissue	Х	Х	X				
LPR2-ACFT-Ind018	1	Tissue	X	X	X				
LPR8-ACFT-Ind019	1	Tissue	X	X	X				
Total Number of Containers	10of 35	Purchase Ord	ler / State	ment of V	Vork # BRL0	09_01LPR			
1) Released by: Company: Date/Time: Company: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time:					NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).				
}	LPR6-ACFT-Ind009 LPR6-ACFT-Ind010 LPR6-ACFT-Ind013 LPR7-ACFT-Ind014 LPR6-ACFT-Ind016 LPR7-ACFT-Ind017 LPR2-ACFT-Ind018 LPR8-ACFT-Ind019 Total Number of Containers 2) Released by: Company: Date/Time:	LPR6-ACFT-Ind009	LPR6-ACFT-Ind009 1 Tissue LPR6-ACFT-Ind010 1 Tissue LPR6-ACFT-Ind013 1 Tissue LPR7-ACFT-Ind014 1 Tissue LPR6-ACFT-Ind016 1 Tissue LPR7-ACFT-Ind017 1 Tissue LPR2-ACFT-Ind018 1 Tissue LPR8-ACFT-Ind019 1 Tissue Total Number of Containers 10of 35 Purchase Ord 2) Released by: 3) Released by: Company: Date/Time:	LPR6-ACFT-Ind009 1 Tissue X LPR6-ACFT-Ind010 1 Tissue X LPR6-ACFT-Ind013 1 Tissue X LPR7-ACFT-Ind014 1 Tissue X LPR6-ACFT-Ind016 1 Tissue X LPR7-ACFT-Ind017 1 Tissue X LPR2-ACFT-Ind018 1 Tissue X LPR8-ACFT-Ind019 1 Tissue X Total Number of Containers 10of 35 Purchase Order / State 2) Released by: 3) Released by: Company: Date/Time: Date/Time: Date/Time:	LPR6-ACFT-Ind009 1 Tissue X X LPR6-ACFT-Ind010 1 Tissue X X LPR6-ACFT-Ind013 1 Tissue X X LPR7-ACFT-Ind014 1 Tissue X X LPR6-ACFT-Ind016 1 Tissue X X LPR7-ACFT-Ind017 1 Tissue X X LPR2-ACFT-Ind018 1 Tissue X X LPR8-ACFT-Ind019 1 Tissue X X Total Number of Containers 10of 35 Purchase Order / Statement of V 2) Released by: 3) Released by: Company: Date/Time: Date/Time: Date/Time:	LPR6-ACFT-Ind009 1 Tissue X X X LPR6-ACFT-Ind010 1 Tissue X X X LPR6-ACFT-Ind013 1 Tissue X X X LPR7-ACFT-Ind014 1 Tissue X X X LPR6-ACFT-Ind016 1 Tissue X X X LPR6-ACFT-Ind016 1 Tissue X X X LPR6-ACFT-Ind017 1 Tissue X X X LPR7-ACFT-Ind018 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X Total Number of Containers 10of 35 Purchase Order / Statement of Work # BRLC Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time	LPR6-ACFT-Ind009 1 Tissue X X X LPR6-ACFT-Ind010 1 Tissue X X X LPR6-ACFT-Ind013 1 Tissue X X X LPR7-ACFT-Ind014 1 Tissue X X X LPR6-ACFT-Ind016 1 Tissue X X X LPR6-ACFT-Ind016 1 Tissue X X X LPR7-ACFT-Ind017 1 Tissue X X X LPR2-ACFT-Ind018 1 Tissue X X X LPR2-ACFT-Ind018 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X X X X X X X X X X X X X X X X	LPR6-ACFT-Ind009 1 Tissue X X X X LPR6-ACFT-Ind010 1 Tissue X X X X LPR6-ACFT-Ind013 1 Tissue X X X X LPR7-ACFT-Ind014 1 Tissue X X X X LPR7-ACFT-Ind014 1 Tissue X X X X LPR7-ACFT-Ind016 1 Tissue X X X X LPR7-ACFT-Ind017 1 Tissue X X X X LPR2-ACFT-Ind017 1 Tissue X X X X LPR2-ACFT-Ind018 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X LPR8-ACFT-Ind019 1 Tissue X X X X X X X X X X X X X X X X X X X	

ate of receipt:: $\mathcal{H} \mathcal{A} \mathcal{L}$	(()	Laborat	tory W.O. #: 1	ハラダカラ	くろ
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200					
ondition upon receipt: $arrho$	000	Time of	receipt: 6	100	
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ooler temperature:	יראר א	Receive	ed by: Kat	7/ 10	nannu
				۷- س	
ooler temperature: 5	·00	Receive	ed by: Kat	TC Ja	hannu

CHAIN-OF-CUSTODY/TEST REQUEST FORM of Passaic RI/FS Tissue **Brooks Rand Labs** Project/Client Name: To: COC reference: # LPR- BRL-CATF-D Task 16.1 (09.58.02.31) Misty Kennard-Mayer 07/08/2010 Project Number: Attn: Shipping Date: **UPS** Jennifer Parker Airbill Number: 12/9E78E01 4298 388/ Contact Name: Shipper: Windward Environmental LLC Jennifer Parker/Dianne Janak Sampled By: Form filled out by: Turnaround requested: Standard Test(s) Requested (check test(s) required) Methylmercury (1630) Inorganic Arsenic (1632) Total Mercury (1631) Sample Collection # of Date (m/d/y) Time Sample Identification Containers Matrix Comments / Instructions 9/8/2009 Tissue Χ Х Χ 8:44 LPR8-ACFT-Ind020 [lar_tag_number(s)] **Tissue** Х Χ Χ 9/8/2009 8:44 LPR8-ACFT-Ind021 Χ 1 Tissue Χ Χ 9/10/2009 LPR8-ACFT-Ind022 13:02 Tissue Χ Χ Χ 9/17/2009 11:05 LPR4-ACFT-Ind023 LPR5-ACFT-Ind024 Tissue Χ Χ Χ 9/18/2009 11:15 **Total Number of Containers** 5 of 35 Purchase Order / Statement of Work # BRL09_01LPR 1) Released by: 2) Released by: 3) Released by: Individual specimens were collected by Windward Environmental, The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites: Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time:

Ward Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

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	To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: イタ	10	Laboratory W.O. #: しゅ 28 65 3
Condition upon receipt:	good	Time of receipt: 900
Cooler temperature:	Š.00	Received by: Katie Jahann

_1	of	1	CHAIN-OF-CUSTODY/TEST REQUEST FORM
Project /Clien	at Namai	Pagasia BUES Tiggue	

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Received by:

Project/Client N	ame: P	To:	Ві	rooks Ra	nd Labs		COC reference # LPR-BRL-RB6						
Project Number	: 09	9.58.02.31 (Task 16.1)		Attn:	M	isty Kenn	ard-Mayer		Shipping Date: 07/13/2010				
Contact Name:	_Je	ennifer Parker		Shipper:	UI	PS	· · · · · · · · · · · · · · · · · · ·		 ··· -	1219E18E 014261	8696		
Sampled By:		indward Environmental LLC		Form filled out by:	Je	nnifer Pa	rker/Ellen	Collins		rested: Standard			
	T										_ 		
							uested (check test(s) required						
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)						
07/13/10	8:15	LPR-071310-RB	3	Water	X	Х	Х			mments / Instructions	1		
										[lar tag number(s)]	1		
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	<u> </u>									,			
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											1		
											1		
											-		
		Total Number of Containers	3	Purchase Orde									
1) Released by:	A	2) Released by:		3) Released by:	-		NOTES				7		
Company:	/			ļ									
Company:	HA	Company:		Company:									
Dete/Fime:	1030	Date/Time:		Date/Time:									
Rec'd by:	1000	Ree'd by:	_	Rec'd by:							1		
UPS	\hat{S}	12/00											
Company: Date/Time:		Company: BRC Date/Time:		Company: Date/Time:									
<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>				1			To be	completed by	/ Laboratory	on sample receipt:	_		
	/	200 West M	ercer Street	200						on sample receipt:			
	\v\	7 1 Suite 401		Date of re	eceipt:: -	7. 14.1	0	Laborat	ory W.O. #: \ ७ <i>\</i>	1028			
WIN	\bigcirc/\bigcirc W	Seattle, WA Tel: (206) 37	Condition	upon rece	ipt: 90	M III	Time of	Time of receipt: 0930					
	environ	mental LLC Tel: (206) 37 Fax: (206) 21		Cooler te	mperature [.]	7 \		Receivo	d by: 1/ ()			

Cooler temperature: 2.. \

1 of ₂

Project/Client Name: Passaic RI/FS Tissue					To: Brooks Rand Labs COC r							ref erence # LPR-BRL-PERF-A			
Project Number:	· _]	ask 16.1	(09.58.02.31)		Attn:			ard-Maye			oping Date:	07/13/2010			
Contact Name:		ennifer Pa	arker		Shipper:		PS				. •				
Sampled By:		Vindward	Environmental LLC		Form filled out him Longifor Deute- (D)						1219E78E 014108 3				
						-			io danak	Tun	naround requ	uested: Standard			
						Test(s) Requested (check test(s) required)									
						Methylmercury (1630)	<u> </u>	32)							
Sample	l					mer	Total Mercury (1631)	ic (163							
Collection				# of		30)	31) 31)	rgar enic							
Date (m/d/y)	Time	Sa	mple Identification	Containers	Matrix	Me (16	Tot (16	Inorganic Arsenic (1632)							
8/11/2009	9:56	LPR3-N	1AFT-Comp02	1	Tissue	Х	Х	Х				mments / Instructions			
8/11/2009	10:08	LPR3-N	1AFT-Comp03	1	Tissue	X	Х	X				[Jar tag number(s)]			
8/12/2009	9:24	LPR3-N	1AFT-Comp04	1	Tissue	Х	X	X							
8/13/2009	10:00	LPR3-N	AFT-Comp05	1	Tissue	X	X	X							
8/13/2009	11:52	LPR3-N	IAFT-Comp07	1	Tissue	X	X	X							
8/13/2009	11:52	LPR3-N	IAFT-Comp08	1	Tissue	X	X	X							
8/14/2009	8:44	LPR3-M	AFT-Comp13	1	Tissue	X	X	X							
8/25/2009	7:30	LPR6-M	AFT-Comp24	1	Tissue	Х	X	X							
8/25/2009	9:54	LPR6-M	AFT-Ind122	1	Tissue	Х	X	X	<u> </u>						
9/1/2009	13:10	LPR1-M	AFT-Comp01	1	Tissue	X	X	X							
		Total Num	ber of Containers	10 of 19	Purchase Ord				9 011 DD						
1) Released by:	U		2) Released by:		3) Released by:			NOTES	J_OILFIX						
Company (4					•		Individual s	pecimens were col	ected by \	Windward Envi	ronmental. The collection date			
Company	HA		Company:		Company:			and time co	orresponds to the e	arliest coll	ected individu	al specimen within the composite. Windward onsite at Alpha			
Date/Time:	1600		Date/Time:		Date/Time:			Analytical. A	Alpha Analytical pro	cessed an	id homogenize	ed the individuals and composites; mple names indicate whether the			
Rec'd by:			Rec'd by:		Rec'd by:			sample is a	n individual (Ind) or	composit	e (Comp).	imple harries indicate whether the			
UPS			yan												
Company: Date/Time:			Company: 312		Company:										
————			Date/Time: 7- 14-10	213 0	Date/Time:										
		=			<u> </u>			T. I.				on cample receipts			
								in no	COMPIATAR N	V I aba	MO40M4				

Ward environmental LLC

	cted by Edbordtory apon sample receipt:
Date of receipt:: 7. 14:10	Laboratory W.O.#: 029028
	Time of receipt: 0名なの
	Received by:

2	of <u>2</u>	CH <i>A</i>	AIN-OF	-CUSTO	DY/	ΓΕSΤ	REQUE	EST FORM
Project/Client N	Name: F	Passaic RI/FS Tissue		То:			and Labs	
Project Number	r: <u>T</u>	ask 16.1 (09.58.02.31)		Attn:	_		nard-Mayer	
Contact Name:	J	ennifer Parker		Shipper:		PS	nara mayor	Shipping Date: 07/13/2010
Sampled By:	Sampled By: Windward Environmental LLC			Form filled out by	-		arker/Dianne	Airbill Number: 12196186 014/08
							anton Diamic	e Janak Turnaround requested: Standard
	1					Test(s) Requ	ested (check tes	est(s) required)
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)	
9/10/2009	8:38	LPR8-MAFT-Comp26	1	Tissue	Х	Х	X	Comments / Instructions
9/10/2009	9:30	LPR8-MAFT-Comp31	1	Tissue	Х	X	X	[lar tag number(s)]
9/12/2009	9:35	LPR8-MAFT-Comp27	1	Tissue	X	X	X	
9/18/2009	10:35	LPR5-MAFT-Comp20	1	Tissue	X	X	X	
9/18/2009	10:35	LPR5-MAFT-Comp21	1	Tissue	Х	Х	X	
9/18/2009	11:57	LPR5-MAFT-Comp22	11	Tissue	X	Х	X	
9/18/2009	13:50	LPR4-MAFT-Comp16	1	Tissue	Х	Х	X	
9/18/2009	14:10	LPR4-MAFT-Comp17	1	Tissue	X	Х	Х	
9/2/2009	15:46	LPR1-MAFT-Ind145	1	Tissue	Χ	Х	Х	
		Total Number of Containers	9 of 19	Purchase Orde	er / State	ment of V	Vork # BRL09)_01LPR
1) Released by:	e f		3) Released by:			NOTES Individual spec	, ecimens were collected by Windward Environmental. The collection date responds to the earliest collected individual specimen within the composite.	
Date/Time:	411	Company:		Company:			Specimens wei	ere grouped together into composites by Windward onsite at Alpha
7//3/10	7/3//0 1600 Date/Time:			Date/Time:			therefore, sam	oha Analytical processed and homogenized the individuals and composites; inples are released by Alpha Analytical. Sample names indicate whether the
Company		Rec'd by:	<u> </u>	Rec'd by:		individual (Ind) or composite (Comp).		
Company: Date/Time:		Company: Date/Time:						



lo be compl	eted by Laboratory upon sample receipt:
	Laboratory W.O. #: 1079023
	Time of receipt: 0.9なり
Cooler temperature:) , , \ .	Received by:

Received by:

0930

Project/Client Name: Passaic RI/FS Tissue					To: Brooks Rand Labs COC referen						ference:	rence: # LPR- BRL-PERWB-B		
Project Number	: <u>T</u> :	ask 16.1	(09.58.02.31)	· · · · · ·	Attn:	. M	listy Kenr	ard-Mayer		Shippin		07/13/2		
Contact Name:	_Je	ennifer Pa	arker		Shipper:		PS							
Sampled By:		/indward	Environmental LLC		Form filled out by: Jennifer Parker/Dianne Janak					Airbill Number: 121908E 01 4108 34. Turnaround requested: Standard				
	1										- Tequi	steu.	Otandard	
					,	Т	est(s) Requ	ested (check tes	st(s) required)					
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)						
9/1/2009	12:59	LPR1-N	MAWB-Ind138	1	Tissue	Х	Х	X					7 Instructions	
9/4/2009	11:25	LPR2-N	MAWB-Ind158	1	Tissue	X	Х	X				[Jar_tag_	number(s)]	
9/7/2009	13:15	LPR8-N	1AWB-Comp32	1	Tissue	Х	Х	X				· ·		
9/12/2009	9:35	LPR8-N	1AWB-Comp28]	Tissue	Х	Х	X				·		
9/12/2009	9:35	LPR8-N	1AWB-Comp29	1	Tissue	Х	Х	X						
9/15/2009	9:23	LPR4-N	1AWB-Comp14	1	Tissue	Х	X	X	.					
9/17/2009	9:52	LPR5-N	1AWB-Comp19	1	Tissue	X	X	Х						
9/17/2009	10:04	LPR5-M	IAWB-Comp18	1	Tissue	Х	Х	X						
9/18/2009	11:57	LPR5-M	IAWB-Comp23	1	Tissue	Х	X	X						
9/18/2009	13:19	LPR4-M	IAWB-Comp15	1	Tissue	Х	Х	X						
		Total Nun	ber of Containers	10 of 20	Purchase Orc	Purchase Order / Statement of Work # BRL09_01LPR								
1) Released by:	14		2) Released by:		3) Released by:			NOTES						
Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by:					Company: Date/Time: Rec'd by:	·	Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).							
VI	P5		100											
Company: Company: Pnc Date/Time: Date/Time: 7,14,10 0930					Company: Date/Time:									
	1		200 West Me		150 mga ikansa	H.Snarace (assessment		To be co	mpleted	by Labo	ratory ι	ıpon san	nple receipt:	
	200 West Mercer Street Suite 401						recent and the second second second	7.19/0	Labor	Laboratory W.O. #: 679019				
VV III	VV	alu montal L	Seattle, WA 9 LC Tel: (206) 378		Conditio	n upon rece	ipt: 900	っし Time of receipt: 0930						

Cooler temperature:

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: _ F	Passaic F	RI/FS Tissue		То:	В	rooks Ra	Rand Labs COC ref erence # LPR-BRL-PER					BRL-PERWB-A		
Project Number:		ask 16.1	(09.58.02.31)		Attn:	M	isty Kenn	ard-Mayer		Shipping Date: 07/13/2010			010		
Contact Name:		lennifer P	arker		Shipper: UPS					– Airbill N	lumber:	1219678	E014108 34		
Sampled By:	_\	Vindward	Environmental LLC		Form filled out by	t by: Jennifer Parker/Dianne Janak					Turnaround requested: Standard				
		1		7											
							est(s) Reque	sted (check t	est(s) required)						
Sample Collection Date (m/d/y)	n # of		# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)								
9/2/2009	15:46	LPR1-	MACT-Ind145	1	Tissue	Х	Х	Х				Comments /			
8/11/2009	7:21	LPR3-1	MAWB-Comp06	1	Tissue	. X	Х	Х				<u> </u>	umbens)j		
8/13/2009	11:52	LPR3-N	MAWB-Comp09	1	Tissue	Χ	Х	Х							
8/13/2009	11:52	LPR3-N	MAWB-Comp10	1	Tissue	X	Х	X					-		
8/13/2009	11:52	LPR3-N	MAWB-Comp11	1	Tissue	X	X	X							
8/13/2009	11:52	LPR3-N	MAWB-Comp12	1	Tissue	Χ	Х	Х							
8/13/2009	11:52	LPR3-A	/AWB-Comp30	1	Tissue	Χ	Х	Х							
8/25/2009	11:09	LPR7-N	MAWB-Ind123	11	Tissue	Χ	Х	Х							
8/26/2009	10:37	LPR7-A	/AWB-Comp25	1	Tissue	Х	X	Х							
8/27/2009	6:56	LPR6-N	MAWB-Ind128	1	Tissue	X	X	Х							
	· · · · · · · · · · · · · · · · · · ·	Total Nu	mber of Containers	10 of 20	Purchase Ord	er / State	ment of W	ork # BRLO	9_01LPR						
1) Released by:	Released by: 2) Released by:						NOTES Individual specimens were				Windward	Environmental.	The collection date n within the composite.		
Company: Company:					Company:			Specimens	were grouped to	gether into	composite	s by Windward	onsite at Alpha		
Date/Time Date/			Date/Time:		Date/Time:			Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the							
Rec'd by:	-	Rec'd by:			Rec'd by:			sample is an individual (Ind) or composite (Comp).							
UPS /					Company:										
Company: Date/Time:	ompany: Company: RNC ate/Time: Date/Time: 7,14,10 0935														



To be completed by Laboratory upon sample receipt:						
Date of receipt:: 7.14:10	Laboratory W.O. #: (0 29029					
Condition upon receipt: gゅっと	Time of receipt: 09ない					
Cooler temperature: \	Received by: [C]					

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	То:	Brooks Rand Labs				COC ref erence	# LPR-BRL-EELF-A
Project Number: Task 16.1 (09.58.02.31) Contact Name: Jennifer Parker		Attn:	_N	listy Kenn	ard-Mayer		Shipping Date:	07/20/2010
		Shipper:	UPS				Airbill Number:	1219678E 01 4168 085
Sampled By:	Windward Environmental LLC	Form filled out by:	J	Jennifer Parker/Dianne Janak			Turnaround requested: Standard	
				Test(s) Requ	ested (check t	est(s) required)		
			nercury	ercury	ic (1632)			

					Te	est(s) Reques	ted (check t		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		
8/11/2009	8:00	LPR3-ARFT-Comp20	1	Tissue	х	Х	Х		Comments / Instructions [lar tag number(s)]
8/11/2009	8:50	LPR3-ARFT-Comp06	1	Tissue	Х	Х	Х		- J
8/11/2009	9:13	LPR3-ARFT-Ind005	1	Tissue	Х	Х	Х		
8/11/2009	11:08	LPR3-ARFT-Comp05	1	Tissue	Х	Х	Х		
8/12/2009	9:00	LPR3-ARFT-Ind010	1	Tissue	Х	Х	Х		
8/12/2009	12:28	LPR3-ARFT-Ind014	1	Tissue	Х	Х	Х		
8/18/2009	8:05	LPR5-ARFT-Comp09	1	Tissue	Х	Х	X		
8/18/2009	8:15	LPR5-ARFT-Ind021	1	Tissue	Х	Х	Х		
8/18/2009	8:42	LPR4-ARFT-Ind022	1	Tissue	Х	Х	Х		
8/18/2009	12:30	LPR4-ARFT-Ind026	1	Tissue	X	X	X		
	٦	Total Number of Containers	10 of 32	Purchase Ord	der / State	ment of W	ork # BRL	09_01LPR	
1) Released by: Company: Date/Time: Company: Date/Time:	Company: Date/Time: 7/20 / 10 / 16 / 15 Rec'd by: Company: Co			3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Speciment Analytical, therefore,	corresponds to the earliest co s were grouped together into Alpha Analytical processed	y Windward Environmental. The collection date ollected individual specimen within the composite. It is composites by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).

To be compre	eted by Laboratory upon sample receipt.
Date of receipt:: 7 21 10	Laboratory W.O. #: 1030013
Condition upon receipt: 900	Time of receipt: 900
Cooler temperature: - 0 . 7 C	Received by: Katic Tahanmi

Project/Client Name: Passaic RI/FS Tissue Project Number: Task 16.1 (09.58.02.31) Contact Name: Jennifer Parker				Го:	Brooks Rand Labs				CO	C reference: # LPR-BRL-EELF-B
			Α	Attn:	Mi	Misty Kennard-Mayer			Shi	pping Date: 07/20/2010
				Shipper:	U	UPS				bill Number: 1219E 18 01 4168 085
ampled By: Windward Environmental LLC		F	Form filled out by:		Jennifer Parker/Dianne Janak				Turnaround requested: Standard	
					T	est(s) Reque	sted (check t	est(s) required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			
8/19/2009	10:43	LPR5-ARFT-Comp12	1	Tissue	Х	Х	Х			Comments / Instructions [Jar tag number(s)]
8/19/2009	10:51	LPR5-ARFT-Ind030	1	Tissue	Х	Х	Х			
8/19/2009	12:44	LPR4-ARFT-Comp07	1	Tissue	Х	Х	Х			
8/19/2009	12:44	LPR4-ARFT-Ind034	1	Tissue	Х	х	Х			
8/20/2009	11:59	LPR5-ARFT-Comp10	1	Tissue	X	Х	Х			
8/20/2009	12:25	LPR5-ARFT-Ind040	1	Tissue	Х	Х	Х			
8/20/2009	13:39	LPR4-ARFT-Comp08	1	Tissue	Х	Х	Х			
8/20/2009	14:42	LPR4-ARFT-Ind044	1	Tissue	Х	Х	Х			
8/21/2009	11:56	LPR5-ARFT-Ind049	1	Tissue	Х	Х	Х			
8/21/2009	12:09	LPR5-ARFT-Ind048	1	Tissue	X	Х	Х			

Purchase Order / Statement of Work # BRL09_01LPR **Total Number of Containers** 10 of 32

1) Released by

Company: Date/Time:

8/21/2009

2) Released by:

Company:

Date/Time:

Company: 13

3) Released by:

Company:

Date/Time:

Rec'd by:

Company: Date/Time:

Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).

To be completed by Laboratory upon sample receipt:

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- l	/Ward
- WV II.	LLC
	environmental LLC

Date of receipt:: $7/21$	Laboratory W.O. #: [D	
Condition upon receipt: 🛭 🐧	Time of receipt:	
Cooler temperature: -0 .		ic Jahanmir

Date/Time:

Ward

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

To be comple	eted by Euboratory aport sample receipts
Date of receipt:: 7 21 (0	Laboratory W.O. #: 1013030
Condition upon receipt: Q000	Time of receipt: 900
Cooler temperature: _0 = 7 = C	Received by: Katic Jahannir

To be completed by Laboratory upon sample receipt:

CHAIN-OF-CUSTODY/TEST REQUEST FORM of COC reference: # LPR-BRL-EELF-D **Brooks Rand Labs** Passaic RI/FS Tissue To: Project/Client Name: Misty Kennard-Mayer Shipping Date: 07/20/2010 Task 16.1 (09.58.02.31) Attn: Project Number: Airbill Number: 17 19E18E 01 4168 0852 Jennifer Parker **UPS** Shipper: Contact Name: Jennifer Parker/Dianne Janak Turnaround requested: Standard Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) Methylmercury (1630) Inorganic Arsenic (1632) Total Mercury (1631) Sample Collection # of Sample Identification Matrix Date (m/d/y) Time Containers Comments / Instructions Х Х Х 9/2/2009 1 Tissue 14:59 LPR2-ARFT-Comp04 [lar.tag.number(s)] Х Χ Х 1 Tissue 9/5/2009 12:03 LPR1-ARFT-Ind085

Purchase Order / Statement of Work # BRL09_01LPR **Total Number of Containers** 2 of 32

1) Released by

2) Released by:

Company:

Date/Time:

3) Released by:

Individual specimens were collected by Windward Environmental. The collection date Specimens were grouped together into composites by Windward onsite at Alpha

Company: Date/Time:

Rec'd by:

and time corresponds to the earliest collected individual specimen within the composite. Analytical, Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).

Company: Date/Time:

Company: Date/Time:

Kt	To be complete	eted by Laboratory upon sample receipt:
Date of receipt:: 🗕 💍 🖯	7-c 7/21/10	Laboratory W.O. #: ししるっろつ
Condition upon receipt: 🧳	000	Time of receipt: 900
Cooler temperature: -0	- T C	Received by: Katic Jahanmir

1 0	f _1		СНА	IN-OF	-CUSTOI	T/YC	EST I	REQU	EST FOR	RM	
Project/Client Na	ame:	Passaic R	I/FS Tissue		То:	Ві	ooks Ra	nd Labs		COC reference # LPR-BRL-RB7	r
Project Number:					Attn:		sty Kenn	ard-Mayer		Shipping Date: 07/19/2010	
Contact Name:	•	Jennifer Pa	· · · · · · · · · · · · · · · · · · ·		Shipper:	UI	PS ·	>		Airbill Number: 1 <u>Z (9678E 0 / 41</u>	25 2
Sampled By:	-	Windward	Environmental LLC		Form filled out by:	Jennifer Parker/Ellen Collins			Collins	Turnaround requested: Standard	.
						T	est(s) Reque	ested (check t	est(s) required)		
Sample Collection Date (m/d/y)	Time	e S	ample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)		Comments / Instructions	
7/19/2010	12:30	LPR-07	71910-RB	3	Water	Х	X	X		[lar.tag.number(s)]	
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	<u> </u>					<u> </u>					
					ļ			<u> </u>			
							•				
		 Total Nu	mber of Containers	3	Purchase Ord	er / State	ement of \		 09_01LPR		
1) Released by:	4		2) Released by:		3) Released by:			NOTES			•
Company	4 A		Company:		Company:					•	
Date/Time:	10° 155	7)	Date/Time:		Date/Time:						
7//7/10 Rec'd by:		J	Rec'd by:	·	Rec'd by:						
Company: Date/Time:	2		Company: BRL Date/Time: 7 20 10 9	60	Company: Date/Time:				·		
<u> </u>								To be	e completed b	y Laboratory upon sample recei	ot:
		ż		_	T1.,	Rigginiani Sai	nality programs	TALISTING HERITALIS			3058



Date of receipt:: 7 20 10	Laboraton/WO#: 1 - 1
Date of receipt 7 [20] 1 0	Laboratory W.O. #: しつしろ o 多 O
	T
Condition upon receipt: Q D D C	Time of receipt: $\mathcal{O}(\mathcal{T})$
\mathbf{v}_{i}	
Cooler temperature: レ・フ	Received by: Catie Jahanum
	$-\infty$

_1 of	3	CHAIN-OF-CUST	TODY/TEST REQUEST	FORM
Project/Client Name:	Passaic RI/FS Tissue	То:	Brooks Rand Labs	COC ref eren
•			Batter Identical Admiran	GLI i D-t

ect/Client Name: Passaic RI/FS Tissue			<u>. </u>	To:			Brooks Rand Labs					
Project Number: Task 16.1 (09.58.02.31)				Attn:	_Mi	Misty Kennard-Mayer						
Contact Name: Jennifer Parker				Shipper:	UF	PS			Airb	oill Number:	12196186	ED1 4349 0
Wi	ndward E	nvironmental LLC	F	orm filled out by	: <u>Je</u>	nnifer Par	rker/Diann	e Janak	Turi	naround req	uested: Sta	ndard
	T:	-							***	T		
						est(s) Reque	sted (check t	est(s) required)		-		
Time	San	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)				aramante / In	ernerione
14:59	LPR2-ARG	CT-Comp04	1	Tissue	Х	Х	Х				[lar tag num	
12:03	LPR1-ARG	CT-Ind085	1	Tissue	Х	Х	X				_	
7:46	LPR3-AR\	WB-Ind001	1	Tissue	Х	Х	X					
11:30	LPR3-AR\	WB-Ind009	1	Tissue	Х	X	Х					
11:36	LPR3-AR\	WB-Ind012	1	Tissue	Х	X	X					
11:28	LPR4-AR	WB-Ind024	1	Tissue	Х	Х	X					
12:39	LPR4-AR	WB-Ind025	1	Tissue	х	Х	X					
12:30	LPR5-AR	WB-Ind039	1	Tissue	Х	Х	X					
14:42	LPR4-AR	WB-Ind043	1	Tissue	Х	Х	X					
11:50	LPR5-AR	WB-Comp11	1	Tissue	Х	Х	Х	<u> </u>				
1	Γotal Num	ber of Containers	10 of 21	Purchase Ord	der / State	ement of V	Vork # BRL	09_01LPR	<u> </u>			
Company: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time: Date/Time: Date/Time:			3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Speciment Analytical, therefore,	corresponds to the 6 s were grouped tog Alpha Analytical pr samples are release	earliest co ether into ocessed ed by Alp	ollected indivion o composites and homogen Tha Analytical.	dual specimen v by Windward or iized the individ	vithin the composite. nsite at Alpha uals and composites;	
	Time 14:59 12:03 7:46 11:30 11:36 11:28 12:39 12:30 14:42 11:50	Task 16.1 (0 Jennifer Par Windward E Windward E 14:59 LPR2-AR0 12:03 LPR1-AR0 11:30 LPR3-AR0 11:36 LPR3-AR0 11:36 LPR3-AR0 11:28 LPR4-AR0 12:39 LPR4-AR0 12:30 LPR5-AR0 14:42 LPR4-AR0 11:50 LPR5-AR0 Total Num	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC Time Sample Identification 14:59 LPR2-ARCT-Comp04 12:03 LPR1-ARCT-Ind085 7:46 LPR3-ARWB-Ind001 11:30 LPR3-ARWB-Ind009 11:36 LPR3-ARWB-Ind012 11:28 LPR4-ARWB-Ind024 12:39 LPR4-ARWB-Ind025 12:30 LPR5-ARWB-Ind039 14:42 LPR4-ARWB-Ind039 14:42 LPR4-ARWB-Ind043 11:50 LPR5-ARWB-Comp11 Total Number of Containers 2) Released by: Company: Company: Beta/Time: Rec'd by: Company: Beta/Time: Rec'd by:	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC # of Containers 14:59	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC Form filled out by: # of Containers Matrix 14:59	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)

Ward environmental LLC

To be compl	eted by Laboratory upon sample receipt:
Date of receipt:: $7/21/10$	Laboratory W.O. #: (013030
Condition upon receipt: g oo d	Time of receipt: 900
Cooler temperature: - 2 , C	Received by: Katie Jahanmit

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Brooks Rand Labs

COC reference: # LPR-BRL-EELWB-B

Project Number:	_Ta	sk 16.1 (0	09.58.02.31)		Attn:	· Mi	Misty Kennard-Mayer				Shipping Date: 07/20/2010			
Contact Name:	Jei	nnifer Par	ker	5	Shipper:	UPS Ai				_ Airbill N	Number:	49018	E 014349	046
Sampled By:	Wi	ndward E	nvironmental LLC	——— F	Form filled out by: Jeni			fer Parker/Dianne Janak Turnaround requested: Standard						
					-									
							est(s) Reque	sted (check t	est(s) required)					
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)						
8/22/2009	8:17	LPR4-AR	WB-Ind060	1	Tissue	Х	Х	Х				omments / [lar tag nu	Instructions Imber(s)]	
8/22/2009	9:22	LPR5-AR	WB-Ind062	1	Tissue	Х	Х	Х					· //	
8/27/2009	8:08	LPR7-ARWB-Ind070		1	Tissue	Х	Х	Х						
8/27/2009	8:47	LPR6-AR	WB-Ind069	1	Tissue	Х	Х	Х						
8/29/2009	10:49	LPR6-AR	WB-Ind074	1	Tissue	X	Х	Х						
9/3/2009	12:37	LPR1-ARV	WB-Comp03	1	Tissue	Х	Х	X						
9/7/2009	14:00	LPR8-AR	WB-Comp16	1	Tissue	Х	Х	Х						
9/8/2009	10:30	LPR8-AR\	WB-Comp15	1	Tissue	Х	Х	Х						
9/8/2009	12:32	LPR8-AR	WB-Comp18	1	Tissue	Х	Х	Х						
9/9/2009	7:49	LPR8-AR	WB-Comp13	1	Tissue	Х	Х	Х						
	Т	otal Num	ber of Containers	10 of 21	Purchase Order / Statement of Work # BRL09_01LPR									
Coppany: Date/Time: Record by: Company: Date/Time:	mpany: Company: Date/Time: Rec'd by: Company: Company: Company: Company: Company:			-	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		·	and time co Specimens Analytical. therefore, s sample is a	orresponds to the were grouped to Alpha Analytical I amples are relea n individual (Ind)	e earliest co gether into processed a sed by Alpl or compos	ollected indivice ocomposites b and homogeni na Analytical. S site (Comp).	dual specimer by Windward ized the indiv Sample name	viduals and compo	posite. osites; er the
								To be	completed	by Lab	oratory u	pon sam	ple receipt:	:

Ward Ward environmental LLC

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Date of receipt:: 717_1	110	Laboratory W.O. #	!! しつ 1 ユ	N20
الناب السياد السيا				,
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	J			
ooler temperature: •	a	Received by:	0-1-0-1	ahanmir
.ooici terripetature.	س ، <i>ا</i>	incecited by.	~ ' ' - ' '	WACWACACLL

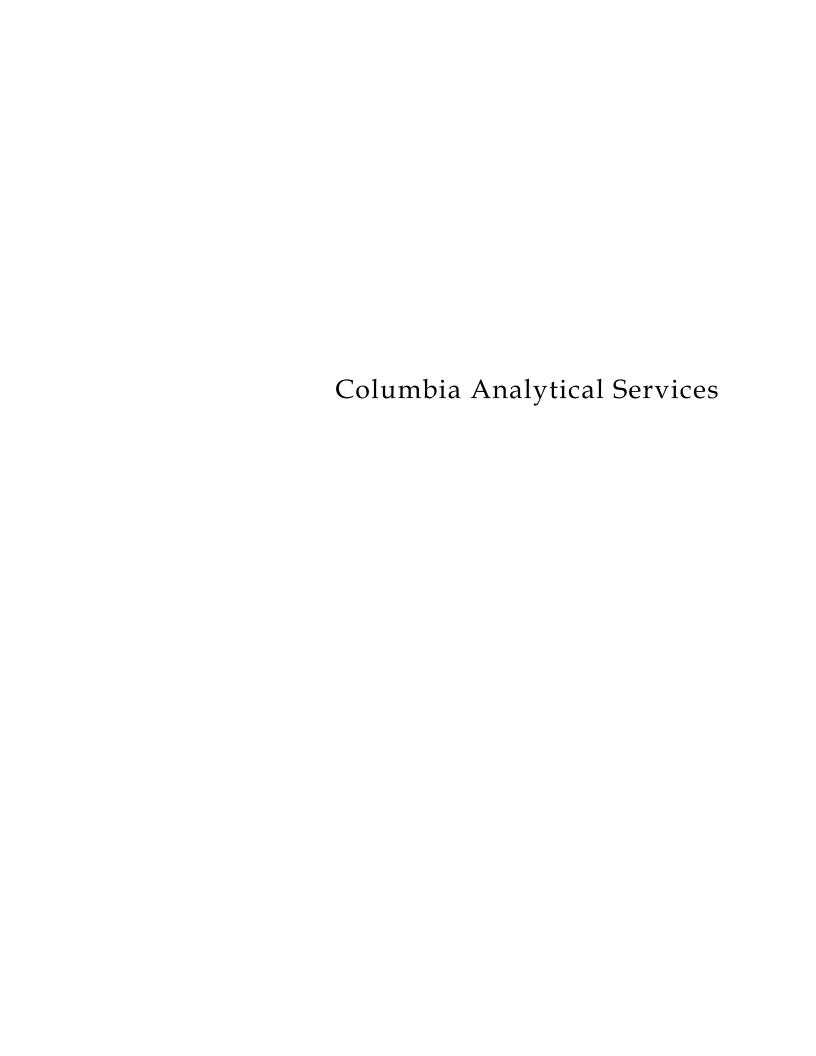
3 of	f <u>3</u>	СНА	IN-OF-	CUSTO	DY/T	EST I	REQUES	T FORM	ΛI	
Project/Client Name: Passaic RI/FS Tissue			1	Го:	Brooks Rand Labs				reference: # LPR-BRL-EELWB-C	
Project Number:	T + (0.4 (00.50.00.04)			Attn:	Mi	sty Kenna	ard-Mayer	Ship	oping Date: 07/20/2010	
Contact Name:			· ·	Shipper:	UPS			Airb	ill Number: 1219E18E 014349 041	
Sampled By:		/indward Environmental LLC		Form filled out by:	Je	nnifer Pa	rker/Dianne Ja	nak Turr	naround requested: Standard	
					Te	est(s) Reque	ested (check test(s)	required)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Methylmercury (1630)	Total Mercury (1631)	Inorganic Arsenic (1632)			
9/9/2009	11:25	LPR8-ARWB-Comp19	1	Tissue	Х	Х	Х		Comments / Instructions [lar tag_number(s)]	
					· 					
			<u> </u>							
									,	
	<u> </u>						M 1- # BBI 00 (11 DD		
	,	Total Number of Containers	1of 21		ler / State	ment of v	Nork # BRL09_0	JILPK		
1) Released by:	1) Released by: 2) Released by:			3) Released by:			and time corres	ponds to the earlie	ed by Windward Environmental. The collection date est collected individual specimen within the composite	
Company	2/12	Company:		Company:			Analytical, Alph	a Analytical proces	r into composites by Windward onsite at Alpha sed and homogenized the individuals and composites	
Date/Time:	Date/Time: Date/Time: Rec'd by: Rec'd by:		-	Date/Time: Rec'd by:			therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).			
Company: Date/Time:	}	Company: 7-12-1 Date/Time: BRL 9	10	Company: Date/Time:						

Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119

Scattle, III Commo
Tel: (206) 378-1364
Fax: (206) 217-9343

To be comple	eted by Laboratory upon sample receipt:
Date of receipt::	Laboratory W.O. #: 、\ o \ る o る o
Condition upon receipt: a DO d	Time of receipt: 970
Cooler temperature: - 2 . L C	Received by: Katie Jahanmin



CHAIN-OF-CUSTODY/TEST REQUEST FORM

110.	ioodio itti	10 113346		Columbia Analytical					# LPR-CAS-MH-1A			
Project Number: 09.58.02.31					Attn: Lynda Huckestein				Ship	ping Date:	03/23/2010	
act Name: Jennifer Parker					Shipper: UPS				Airb	ill Number:	12 19E18E 01 4299 1	
_ <u>W</u>	indward E	Environmental LLC	Fe	orm filled out by:	Jennife	r Parker	/ Diane Ja	nak	Turr	Turnaround requested: Standard		
T			T									
					Те		sted (check to	est(s) required	-			
Time	Sai	mple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)		nments / Instructions Jar tag number(s)]	
07:12	LPR6-CS	MH-Comp37	1	Tissue	Х	Х	Х	Х	Х			
09:58	LPR6-CSMH-Comp38		1	Tissue	Х	Х	Х	Х	Х			
13:03	LPR4-CSMH-Comp31		1	Tissue	Х	Χ	Х	Х	Х			
07:13	LPR6-CSMH-Comp41		1	Tissue	Х	Χ	Х	Х	Х			
07:26	LPR6-CSMH-Comp42		1	Tissue	Х	Х	X	Х	Х			
07:52	LPR6-CS	MH-Comp44	1	Tissue	Х	Χ	X	Х	х			
09:24	LPR7-CS	MH-Comp45	1	Tissue	Х	Х	X	Х	Х			
09:24	LPR7-CSI	MH-Comp46	1	Tissue	Х	Х	Х	Х	Х			
09:35	LPR7-CS	MH-Comp49	1	Tissue	Х	Х	X	Х	Х			
08:58	LPR7-CSI	MH-Comp53	1	Tissue	Х	Х	X	Х	Х			
7	Total Num	ber of Containers	10 of 21	Purchase Orde	r / Stateme	ent of Wo	rk # CAS09_	01LPR				
1) Released by: Company: Alpha Analytical Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time:			1030	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released be Company: Date/Time: Rec'd by: Company: Date/Time:	oy:		Windward date and to collected in composite together in onsite at A processed	specimens were collected by Environmental. The collection ime corresponds to the earliest individual specimen within the Specimens were grouped into composites by Windward Ipha Analytical. Alpha Analytical and homogenized the s; therefore, samples are released knalytical.	
	Time 07:12 09:58 13:03 07:13 07:26 07:52 09:24 09:24 09:35 08:58	7:12 LPR6-CS 09:58 LPR6-CS 13:03 LPR4-CS 07:13 LPR6-CS 07:52 LPR6-CS 09:24 LPR7-CS 09:24 LPR7-CS 09:35 LPR7-CS 09:35 LPR7-CS Total Num	D9.58.02.31 Jennifer Parker Windward Environmental LLC	D9.58.02.31	O9.58.02.31	Description	Description	Description	Denoifer Parker Denoifer	O9.58.02.31	Denoifer Parker	

Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

	and any control of the control of th
Date of receipt: 3/24/17	Laboratory W.O. #: KIDD 2 He 7
Condition upon receipt: /h/act	Time of receipt: /030
Cooler temperature: -/3, 7	Received by: John Jons

To be completed by Laboratory upon sample receipt:

Project/Client Nar	/FS Tissue	To: Columbia Analytical						# LPR-CAS-MH-1B					
Project Number:	_09	9.58.02.3°	1		Attn:	Lynda Huckestein				Ship	Shipping Date: 03/23/2010		
Contact Name: Jennifer Parker					Shipper:	UPS				Airb	oill Number:	1Z 19E18E 01 4299 18	
Sampled By:	W	indward l	Environmental LLC		Form filled out by:	Jennife	er Parker	/ Diane Ja	ınak	Turi	naround requ	ested: Standard	
	-	7											
						Te	est(s) Reque	sted (check t	est(s) require				
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,60108)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Co	mments / Instructions [Jar tag number(s)]	
9/10/2009	13:02	LPR8-CS	MH-Comp61	1	Tissue	X	Х	X	Х	Х			
8/25/2009	09:39	LPR7-CSMH-Comp48		1	Tissue	X	Х	Х	X	X			
9/9/2009	09:54	LPR8-CSMH-Comp54		1	Tissue	X	Х	X	X	Х			
8/25/2009	09:35	LPR7-CS	LPR7-CSMH-Comp50		Tissue	X	Х	X	X	Х			
9/9/2009	09:54	LPR8-CS	LPR8-CSMH-Comp55		Tissue	X	Х	X	X	Х			
9/8/2009	08:44	LPR8-CS	MH-Comp56	1	Tissue	Χ	Х	X	Х	Χ			
9/9/2009	08:56	LPR8-CS	MH-Comp57	1	Tissue	X	Х	X	X	Х			
9/1/2009	12:33	LPR1-CS	MH-Comp01	1	Tissue	X	Х	X	X	X			
9/2/2009	15:02	LPR1-CS	MH-Comp02	1	Tissue	X	Х	X	X	X			
9/2/2009	15:46	LPR1-CS	MH-Comp03	1	Tissue	Х	Х	X	X	Х		W-1000000000000000000000000000000000000	
		Total Nun	nber of Containers	10 of 21	Purchase Orde	er / Statem	ent of Wor	rk # CAS09_	01LPR				
1) Released by: 2) Released by:				3) Released by:			4) Released	by:		1	l specimens were collected by		
Company: Alpha Analytical Company:			Company:			Company:			Windward Environmental. The collection date and time corresponds to the earliest				
Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Date/Time:			Date/Time: Rec'd by: Company:			Date/Time: Rec'd by: Company:			composit together onsite at processes	individual specimen within the e. Specimens were grouped into composites by Windward Alpha Analytical. Alpha Analytical d and homogenized the			
Date/Time:			Date/Time: 3/24/10	1030	Date/Time:	-		Date/Time:				es; therefore, samples are released Analytical.	

Wi	Ward Ward LLC

To be comple	eted by Laboratory upon sample receipt:
Date of receipt: 3/24//0	Laboratory W.O. #: WOO 2763
Condition upon receipt: / fact	Time of receipt: 16 3 0
Cooler temperature: -/3, 7	Received by: JOHN JONES

 $_3$ of $_3$

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				To:		ibia Anal	lytical	# LPR-CAS-MH-1C			
Project Number:	_09.	58.02.31	ttn:						Shipping Date: 03/23/2010		
Contact Name:	Jer	nnifer Parker	hipper:						oill Number:	12 19E18E 014299 18.	
Sampled By:	_Wii	ndward Environmental LLC	Form filled out by:		Jennife	er Parker	/ Diane Ja	ınak	Turr	naround requ	ested: Standard
	W				Te	est(s) Reque	ested (check t	est(s) require	ed)		ALIMENT AND AND AND AND AND AND AND AND AND AND
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (se, 7742)	Co	mments / Instructions [Jar tag number(s)]
9/2/2009	15:46	LPR1-CSMH-Comp04	1	Tissue	Х	Х	X	Х	Х		
				ļ							
									1		400499
						·					
											A

	T	otal Number of Containers	1 of 21	Purchase Orde	r / Statem	ent of Wo	rk # CAS09_	01LPR			
2) Released by: Company: Alpha Analytical Date/Time: Company: Company: Company: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time:		U 0 1030	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			Windwar date and collected composit together onsite at processe composit	Il specimens were collected by d Environmental. The collection time corresponds to the earliest individual specimen within the te. Specimens were grouped into composites by Windward Alpha Analytical. Alpha Analytical d and homogenized the es; therefore, samples are released Analytical.	



Date of receipt: 3/24/10	Laboratory W.O. #: KIDD 2762
Condition upon receipt:	Time of receipt: /030
Cooler temperature: – 13, 7	Received by: Joseph Jones

1	of	1
---	----	---

Project/Client Name: Passaic RI/FS Tissue Project Number: 09.58.02.31 Contact Name: Jennifer Parker Sampled By: Windward Environmental LLC				To: Columbia And Attn: Lynda Huckes Shipper: UPS Form filled out by: Ellen Collins/D					Airt	oping Date: oill Number: naround req	# LPR-CAS-RB2 04/12/2010 12 19E18E01 4143 94 uested: Standard
Sampled by:			TO THE PROPERTY OF THE PROPERT		Test(s) Requested (check test(s) required)						
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
4/12/2010	10:40	LPR-041210-RB	2	Water	X	Х	Х	Х		-	omments / Instructions [lar tag_number(s)]

Total Number of Containers 2 Purchase Order / Statement of Work # CAS09_01LPR

1) Released by:

Company:

Company:

Date/Times

Date/Time/12/10 /305
Rec'd by:

Company: Date/Time: 2) Released by:

Company: Date/Time:

c'd by: By Brad Tobin

Company: (a.\$ Date/Time: 4-13-10 1000

3) Released by:

Company: Date/Time:

Rec'd by:

Company: Date/Time:

To be completed by Laboratory upon sample receipt:

NOTES

Wi	Ward Ward LLC
	environmental

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt: 4 - 13 - 70	Laboratory W.O. #:
Condition upon receipt: good	Time of receipt: ,000
Cooler temperature: — (), 1	Received by: Brad Tobin

4) Released by:

Company:

Date/Time:

Rec'd by:

Company:

Date/Time:

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K1003357

LPR-CAS-CT-A

Project Number	·09	9.58.02.31	At	rtn:	Lynda Huckestein					Shipping Date: 4/7/10		
Contact Name:	***************************************	ennifer Parker	Airbill Number: 12196786014323									
Sampled By:	_W	indward Environmental LLC	Fc	orm filled out by:	Jennife	er Parker			Turn	Turnaround requested: Standard		
					Te	st(s) Reques	sted (check te	est(s) required	(b)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions [Jar tag number(s)]		
8/20/2009	13:03	LPR4-CSCT-Comp31	1	Tissue	Х	Х	Х	Х	Х			
9/1/2009	12:33	LPR1-CSCT-Comp01	1	Tissue	Χ	Х	Х	Х	Х			
9/2/2009	15:02	LPR1-CSCT-Comp02	1	Tissue	Х	Х	Х	Х	Х			
9/2/2009	15:46	LPR1-CSCT-Comp03	1	Tissue	Х	Х	Х	Х	Х			
9/2/2009	15:46	LPR1-CSCT-Comp04	1	Tissue	Х	Х	Х	Х	Х			
9/1/2009	14:04	LPR1-CSCT-Comp06	1	Tissue	Х	Х	Х	Х	Х			
9/2/2009	16:33	LPR1-CSCT-Comp07	1	Tissue	Х	Х	X	Х	Х			
9/2/2009	12:49	LPR1-CSCT-Comp11	1	Tissue	Х	Х	X	Х	Х			
8/18/2009	11:41	LPR4-CSCT-Comp30	1	Tissue	Х	Х	X	Х	Х			
9/1/2009	12:49	LPR1-CSCT-Comp13	1	Tissue	X	X	X	Х	Х			
		Total Number of Containers	10 of 24	Purchase Orde	r / Statem	ent of Wor	k # CAS09_	01LPR				
1) Released by:		2) Released by:		3) Released by:			4) Released b	y:		5) Released by:		
Company de	1											
Date/Tyne:	PAA	Company: Date/Time:		Company: Date/Time:			Company: Date/Time:			Company: Date/Time:		
Rec'd by:	1535			,			,					
<u>қес а ыу:</u>	105	Rec'd by: Jugar 7	\$ ~~·	Rec'd by:			Rec'd by:			Rec'd by:		
Company: Date/Time:	/ >	Company: CAS Date/Time: 4/8/10	1000	Company: Date/Time:			Company: Date/Time:			Company: Date/Time:		
					200331		To be	complete	d by Labo	ratory upon sample receipt:		



Date of receipt:: 4/8/10	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 1 000
Cooler temperature: 0.1/Fromn	Received by: 70m 70ms

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K1003357

#LPR-CAS-CT-B

Project Number:	_09	.58.02.31			Attn:	Lynda Huckestein Sh					ping Date:	4/7/10
Contact Name:	Jennifer Parker Shipper:									Airb	ill Number:	1219/2/18/2014/23/1575
Sampled By:	W	ndward E	nvironmental LLC		Form filled out by:	Jenn	nifer Parke	er		Turr	- naround reques	
				1	i -							
						Te	T	sted (check t	est(s) require			
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)		ments / Instructions ar tag number(s)]
9/1/2009	12:09	LPR2-CS	CT-Comp14	1	Tissue	X	Х	Х	Х	Х		
9/1/2009	11:03	LPR2-CS	CT-Comp17	1	Tissue	Х	Х	Х	Х	Х		
9/1/2009	10:02	LPR2-CS	CT-Comp15	Tissue	Х	Х	Х	Х	Х			
9/3/2009	12:35	LPR2-CSCT-Comp18 1			Tissue	X	Х	Х	Х	Х		
9/1/2009	11:32	LPR2-CSCT-Comp19 1			Tissue	Х	Х	Х	Х	Х		
9/1/2009	11:32	LPR2-CS0	CT-Comp20	1	Tissue	Х	Х	X	Х	Х		
8/11/2009	10:08	LPR3-CS0	CT-Comp24	1	Tissue	Х	Х	Х	Х	Х		
8/18/2009	07:43	LPR5-CS0	CT-Comp34	1	Tissue	X	Х	Х	Х	х		
8/12/2009	10:29	LPR3-CS0	CT-Comp26	1	Tissue	X	X	Х	Х	Х		
8/18/2009	10:35	LPR4-CS0	CT-Comp32	1	Tissue	Х	Х	Х	Х	Х		
	1	otal Num	ber of Containers	10 of 24	Purchase Orde	r / Statem	ent of Wor	k # CAS09_	01LPR			
1) Released by:	W	;	2) Released by:		3) Released by:			4) Released	<u>by:</u>		5) Released	by:
Company: Date/Time: Rec'd by: Company: Date/Time: Company: Company: Date/Time: Date/Time: Company: Date/Time: Da			1000	Date/Time: Date/T Rec'd by: Rec'd Company: Company			Company: Date/Time: Rec'd by: Company: Date/Time:	Date/Time: Rec'd by: Company: Company: Company:			:	
L. Vannasionin			- Annual Control		•	M		To be	complete	d by Labo	oratory upo	n sample receipt:



Date of receipt:: $4/8/10$	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: /000
Cooler temperature: 0.2/Frozen	Received by: JOHN JOHES

3

of g

Passaic RI/FS Tissue

Project/Client Name:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K1063357

#LPR-CAS-CT-C

Project Number	· <u>09</u>	09.58.02.31 Attn:						tein	ipping Date: 4710			
Contact Name:	_Je	nnifer Pa	rker	Shi	pper:					Airb	III Number: 1219E181	E 01 4323 15'
Sampled By:		indward E	Environmental LLC	For	m filled out by:	Jenni	fer Parke	r		Turn		ındard
Sample Collection Date (m/d/y) 8/18/2009 8/11/2009 8/13/2009	Time 12:01 07:21 11:52 13:46	LPR4-CS LPR3-CS LPR3-CS	mple Identification CT-Comp33 CT-Comp27 CT-Comp28 CT-Comp35	# of Containers 1 1 1 1	Matrix Tissue Tissue Tissue Tissue	X X X Lipids (Bligh-	est(s) Reque X X X X	ested (check to the check to th	X X Wetals (ICP/MS, 6020)	X X X Metals (Se, 7742)	Comments / Ins [Jar tag numl	
	•	Total Nun	nber of Containers	4 of 24	Purchase Orde	er / Statem	ent of Wo	 rk # CAS09	LI 01LPR	<u> i</u>	The state of the s	
1) Released by:	no L		2) Released by:		3) Released by:			4) Released			5) Released by:	
Company: Date/Time: Rec'd by: Company: Date/Time:	1535 1535		Company: Date/Time: Rec'd by: Company: CA5 Date/Time: 4/8/16	100U	Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:	
								To be	complete	d by Labo	ratory upon sampl	e receipt:



Date of receipt:: 4/8//0	Laboratory W.O. #:
Condition upon receipt: / / / / a cy	Time of receipt: /000
ooler temperature: 0,2/Fruzen	Received by: John Johns

CHAIN-OF-CUSTODY/TEST REQUEST FORM

K1663359

Project/Client Na	me: Pa	ssaic RI/I	FS Tissue		To:		Columbia	a Analytic	al		# LPR-CAS-MH-2A
Project Number: 09.58.02.31			Attn:		Lynda Hu	ckestein		ipping Date: 4/7/10			
Contact Name:	Je	nnifer Par	ker		Shipper:					Airb	ill Number: 1 <u>Z 19E18E01 4283</u> 85a
Sampled By:	W	indward E	nvironmental LLC		Form filled	d out by:	Jennifer F	arker		Turi	naround requested: Standard
		T			1		B				
							Test(s) Reque	sted (check to	I T		
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions [Jar tag number(s)]
9/8/2009	09:50	LPR8-CSN	ИН-Comp58	1	Tissue	Х	Х	X	Х	Х	
9/1/2009	14:04	LPR1-CSN	⁄IH-Comp06	1	Tissue	Х	Х	Х	Х	Х	
9/2/2009	16:33	LPR1-CSN	ИН-Comp07	1	Tissue	Х	Х	X	Х	Х	
9/2/2009	12:49	LPR1-CSN	ИН-Comp11	1	Tissue	Х	Х	Х	Х	Х	
8/20/2009	13:03	LPR4-CSN	ИН-Comp30	1	Tissue	Х	Х	X	Х	Х	WW Note: Correct
9/1/2009	12:49	LPR1-CSN	ИН-Comp13	1	Tissue	Х	X	X	Х	Х	collection date/time for
9/1/2009	12:09	LPR2-CSN	ИН-Comp14	1	Tissue	Х	X	X	Х	Χ	LPR4-CSMH-Comp30 is
9/1/2009	11:03	LPR2-CSN	ИН-Comp17	1	Tissue	х	Х	Х	Х	Х	8/18/2009 at 11:41.
9/1/2009	10:02	LPR2-CSN	ИН-Comp15	1	Tissue	Х	Х	Х	Х	Х	
9/3/2009	12:35	LPR2-CSN	ИН-Comp18	1	Tissue	Х	Х	Х	Х	Х	
	7	Γotal Num	ber of Containers	10 of 22	Purchase Ord	er / State	ment of Wo	rk # CAS09_	01LPR		
1) Released by:			2) Released by:		3) Released by:			4) Released	by:		5) <u>Released by:</u>
Company, Date/Time: Rec'd by: Company: Date/Time:	A- 1425 P5		Company: Date/Time: Rec'd by: Company: CAS Date/Time: 4/8/10	70 x 115	Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:
								To be	complete	d by Lab	oratory upon sample receipt:



Date of receipt:: $\frac{2}{3}/8/10$	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 1000
Cooler temperature: 0,7 / Frozer	Received by: John Johns

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

Shipping Date:

Lynda Huckestein

K1603359

LPR-CAS-MH-2Brev

Project Number: 09.58.02.31				Attn:			ckestein	Shippir	ng Date:		
Contact Name: Jennifer Parker		er	Shipper:	Shipper:			Airbill I	Number:			
Sampled By:	V	/indward En	vironmental LLC		Form filled	out by:	Jennifer P	arker	Turnar	ound reques	ted: Standard
					ſ						
1							Test(s) Reques	sted (check t	7	ed)	
Sample Collection Date (m/d/y)	Time	Sam	ple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions
9/1/2009	11:32	LPR2-CSM	IH-Comp19	1	Tissue	Х	Х	X	Х	X	[Jar tag number(s)]
9/1/2009	11:32	LPR2-CSM	1H-Comp20	1	Tissue	Х	Х	X	X	Х	
8/11/2009	10:08	LPR3-CSM	1H-Comp24	1	Tissue	Х	Х	X	X	X	
8/18/2009	07:43	LPR5-CSM	LPR5-CSMH-Comp34		Tissue	Х	X	х	х	X	Alpha ID L1003087-36 on bag
8/12/2009	10:29	LPR3-CSM	1H-Comp26	1	Tissue	Х	X	X	Х	X	
8/18/2009	10:35	LPR4-CSM	1H-Comp32	1	Tissue	Х	X	X	Х	X	
8/18/2009	12:01	LPR4-CSM	1H-Comp33	1	Tissue	Х	X	X	Х	X	
8/11/2009	07:21	LPR3-CSM	1H-Comp27	1	Tissue	X	X	X	Х	X	
8/13/2009	11:52	LPR3-CSM	1H-Comp28	1	Tissue	X	X	X	Х	X	
8/21/2009	13:46	LPR5-CSM	1H-Comp35	1	Tissue	X	X	X	X	<u> </u>	
		Total Numb	er of Containers	10 of 22	Purchase Ord	der / State	ement of Wo	rk # CAS09	01LPR		
1) Released by:			2) Released by:		3) Released by:			4) <u>Released</u>	by:		5) Released by:
Company:			Company:		Company:			Company:			Company:
Date/Time:			Date/Time:		Date/Time:			Date/Time	:		Date/Time:
Rec'd by:			Rec'd by: Jours	70 4250	Rec'd by:			Rec'd by:			Rec'd by:
Company: Date/Time:		***	Company: CAS Date/Time: 4/8/10	/000	Company: Date/Time:			Company: Date/Time			Company: Date/Time:
<u>L</u>								Tobo	complete	d by Lab	oratory upon sample receipt:



To	be	comp	lete	d by	/ La	bora	tory	upon	samp	le	rece	ıpt

Date of receipt:: 4/8//0	Laboratory W.O. #:
Condition upon receipt: Mast	Time of receipt: /000
Cooler temperature: 0.7/Frozen	Received by: 1042 Towe 3

1 of ₁

CHAIN-OF-CUSTODY/TEST REQUEST FORM



Project/Client Name: Passaic RI/FS Tissue			То:	Colur	nbia Ana	lytical		# LPR-CAS-HT-A			
Project Number: 09.58.02.31			Attn:	Lynda Huckestein					Shipping Date: 4/14/2010		
Contact Name:	_Je	nnifer Parker		Shipper:	UPS				Airb	ill Number: 121988E 01 41242067	
Sampled By:	_W	indward Environmental LLC		Form filled out by:	Jennit	er Parker	r/Dianne J	anak	Turr	naround requested: Standard	
					Te	st(s) Reques	sted (check to	est(s) required	4)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions [Jar tag_number(s)]	
9/1/2009	13:10	LPR1-CSHT-Comp05	1	Tissue	Χ	X	X	Х	Х		
9/1/2009	11:03	LPR2-CSHT-Comp63	1	Tissue	Х	Χ	Х	Х	Χ		
9/3/2009	11:10	LPR1-CSHT-Comp09	1	Tissue	Х	Х	Х	Х	Х		
8/11/2009	07:21	LPR3-CSHT-Comp64	1	Tissue	Х	X	X	Х	Х		
9/2/2009	14:13	LPR2-CSHT-Comp21	1	Tissue	X	X	Х	Х	X		
8/25/2009	09:24	LPRX-CSHT-Comp65	1	Tissue	Х	Х	Х	Х	Х		
9/8/2009	07:48	LPR8-CSHT-Comp66	1	Tissue	х	Х	Х	Х	Х		
		Total Number of Containers	7	Purchase Order	/ Statem	ent of Wor	k # CAS09_	U I O1LPR	<u> </u>		
1) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	AA 1425	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	lan.	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released I Company: Date/Time: Rec'd by: Company: Date/Time:	<u>by:</u>		NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical, Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.	

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

To be comple	eted by Laboratory upon Sample receipt.
Date of receipt:: 4/15/10	Laboratory W.O. #: \((100361)\)
Condition upon receipt:	Time of receipt: \$1/15/10,0940
Cooler temperature: 10.6 / Ficher	Received by:
Jear	

1 (of	3
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Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K	1003612
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LPR-CAS-MT-A

Project Number:	_09	.58.02.31		Attn:	Lynda	a Huckest	tein		Ship	oping Date: 4/14/2010
Contact Name:	_Je	nnifer Parker		Shipper:	UPS				Airb	oill Number: 1219E78E01412420
Sampled By:	<u>W</u> i	indward Environmental LLC		Form filled out by:	Jenni	fer Parke	r/Dianne J	anak	Turi	naround requested: Standard
					Te	est(s) Reque	sted (check t	est(s) require		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (5e, 7742)	Comments / Instructions [Jar tag number(s)]
8/28/2009	8:50	LPR7-CSMT-Comp52	1	Tissue	Х	Х	Х	Х	Х	
9/1/2009	14:04	LPR1-CSMT-Comp08	1	Tissue	Х	Х	Х	Х	Х	
9/2/2009	12:08	LPR1-CSMT-Comp10	1	Tissue	Х	Х	Х	X	Х	
9/3/2009	12:00	LPR1-CSMT-Comp12	1	Tissue	Х	Х	X	X	Х	
9/2/2009	12:26	LPR2-CSMT-Comp16	1	Tissue	Х	Х	Х	Х	Х	
9/17/2009	11:27	LPR6-CSMT-Comp39	1	Tissue	Х	Х	X	Х	Х	
9/1/2009	11:46	LPR2-CSMT-Comp22	1	Tissue	Х	Х	х	Х	Х	
9/1/2009	11:07	LPR2-CSMT-Comp23	1	Tissue	Х	Х	Х	Х	Х	
8/27/2009	06:50	LPR6-CSMT-Comp40	1	Tissue	Х	Х	Х	Х	Х	
8/12/2009	09:24	LPR3-CSMT-Comp25	1	Tissue	Х	Х	Х	Х	Х	
	, 1	Total Number of Containers	10 of 21	Purchase Orde	r / Statem	ent of Wo	rk # CAS09_	01LPR		
1) Released by: Company Date/Timey Company: Date/Time:	1425	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	n î	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.

Ward Ward environmental LLC

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Passaic RI/FS Tissue

Project/Client Name:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K1003617

#LPR-CAS-MT-B

Project Number:	_09	.58.02.31			Attn:	Lynda Huckestein Shipp					pping Date: 4/14/2010	
Contact Name:	_Jer	nnifer Par	ker		Shipper:	UPS Airbill					ill Number: 1219E (8E 014124 Zok	
Sampled By:	Wi	Windward Environmental LLC Form filled out by:				Jennife	er Parker/	Dianne Ja	ınak	Turr	naround requested: Standard	
						Te	st(s) Reques	sted (check t	est(s) require	ed)		
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions [Jar tag number(s)]	
8/27/2009	07:17	LPR6-CSN	MT-Comp43	1	Tissue	Х	Х	X	Х	Х		
8/15/2009	7:00	LPR3-CSN	MT-Comp29	1	Tissue	X	Х	X	Х	Х		
8/20/2009	12:20	LPR5-CSN	MT-Comp36	1	Tissue	Х	Х	Х	Х	Х		
8/26/2009	11:38	LPR7-CSN	MT-Comp47	1	Tissue	Х	Х	Х	Х	Х		
8/27/2009	08:55	LPR7-CSN	MT-Comp51	1	Tissue	X	X	Х	Х	Х		
9/9/2009	08:56	LPR8-CSN	MT-Comp59	1	Tissue	Х	Х	Х	Х	Х		
9/9/2009	08:47	LPR8-CSN	MT-Comp60	1	Tissue	Х	Х	Х	Х	Х		
9/10/2009	13:02	LPR8-CSN	MT-Comp62	1	Tissue	X	X	Х	Х	Х		
9/1/2009	13:10	LPR1-CSN	MT-Comp05	1	Tissue	X	Х	Х	Х	Х		
9/3/2009	11:10	LPR1-CSN	/IT-Comp09	1	Tissue	Х	Х	X	Х	Х		
	, T	otal Num	ber of Containers	10 of 21	Purchase Orde	er / Statem	ent of Wor	k # CAS09_	01LPR			
1) Released by: Company Date/Time.	/2 1A 1425 B	and the second s	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			4) Released (Company: Date/Time: Rec'd by:	by:		NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha	
Company: Date/Time:			Company: Date/Time:	040	Company: Date/Time:			Company: Date/Time:			Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.	
									_			



To be completed by Laboratory upon sample in						
Date of receipt::	Laboratory W.O. #:					
Condition upon receipt:	Time of receipt:					
Cooler temperature:	Received by:					

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame:	Passaic RI/FS Tissue	To:		Columb	oia Analy	ytical	# LPR-CAS-MT-C		
Project Number:	:	09.58.02.31	Att	Attn:		łuckestei	in	oping Date: 4/14/2010		
Contact Name:	_	Jennifer Parker	Shi	Shipper:				oill Number: 1Z 19E18E 014124 201		
Sampled By:	_	Windward Environmental LLC	For	Form filled out by:		Parker/[Dianne Jar	nak		naround requested: Standard
				1	Te	est(s) Reque	ested (check t	est(s) require	d)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions [Jar tag number(s)]
9/2/2009	14:13	LPR2-CSMT-Comp21	1	Tissue	Х	Х	Х	Х	Х	
	····									
	·									
		Total Number of Containers	1 of 21	Purchase Orde	er / Statem	ent of Wo	 rk # CAS09_	01LPR		
1) Released by:	. //	2) Released by:		3) Released by:			4) Released	by:		NOTES Individual specimens were collected by
Company:	41	Company:		Company:			Company:			Windward Environmental. The collection date and time corresponds to the earliest
Date/Time:	11/35	Date/Time:		Date/Time:			Date/Time:			collected individual specimen within the composite. Specimens were grouped
Rec'd by:	723	Rec'd by:	11/	Rec'd by:			Rec'd by:			together into composites by Windward onsite at Alpha Analytical. Alpha
Company: Date/Time: Company: Date/Time: Company: Date/Time:		0940	Company: Date/Time:		Company: Date/Time:				Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.	
		7,1								



To be comple	eted by Laboratory upon sample receipt:
Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

1 of 1



Project/Client Na	ame: P	assaic RI	/FS Tissue		То:	Columbia Analytical					COC reference # LPR-CAS-RB3		
Project Number:	0	9.58.02.31			Attn:	Ly	nda Huck	estein		Shi	pping Date:	06/08/2010	
Contact Name: Jennifer Parker			Shipper:		PS			Airt	oill Number:	1Z19E18E0142659			
Sampled By:		Vindward E	Environmental LLC		Form filled out by	/: Je	nnifer Par	ker/Ellen	Collins	Tur	naround requ	uested: Standard	
						Т	est(s) Reque	sted (check t	est(s) required)				
Sample Collection Date (m/d/y)	Time	Sai	mple Identification	# of Containers	Matrix	Butyltins (Krone)	Metals (ICP,60108)	Metals (ICP/MS, 6020)	Metals (Se. 7742)	and the second s		omments / Instructions	
6/8/2010	13:30	LPR-060	0810-RB	2	Water	X	X	X	X		i	[lar tag number(s)]	
	1.46.000					Ì						PARTITION OF THE PARTIT	
	:												
												A STATE OF THE STA	
	waters minimum							S COLUMN		***************************************		ALL AND A MANAGEMENT AN	
		Total Num	ber of Containers	2	Purchase Ord	der / State	ment of W	ork # CAS(09_01LPR				
1) Released by:			2) Released by:		3) Released by:			NOTES					
Company: Date/Time: Rec'd by: Company: Date/Time:	143		Company: Date/Time: Rec'd by: Company: Date/Time:	1020	Company: Date/Time: Rec'd by: Company: Date/Time:								
								To be	completed	by Lab	oratory u _l	oon sample receipt:	
Vio	\X\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Vard	200 West Me Suite 401 Seattle, WA 9 LC Tel: (206) 378 Fax: (206) 21	98119 3-1364	Condition	receipt:: (00	Time	ratory W of receip			

Cooler temperature:

Received by:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	To:	Columbia Analytical	COC reference	# LPR-CAS-PI-A
Project Number:	09.58.02.31	Attn:	Lynda Huckestein	Shipping Date:	06/09/2010
Contact Name:	Jennifer Parker	Shipper:	UPS	Airbill Number:	1Z 19E18E 014134 942
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround requ	lested: Standard

					Te	st(s) Reque	sted (check to	est(s) require	ed)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
8/25/2009	9:54	LPR6-ELFT-Ind001	1	Tissue	Х	Х	Х	Х	Х	Comments / Instructions [Jar tag number(s)]
9/19/2009	9:35	LPR5-MSFT-Comp01	1	Tissue	Х	Х	X	X	Х	
9/8/2009	10:09	LPR8-MSFT-Ind002	1	Tissue	Х	Χ	X	Х	Х	
9/18/2009	10:35	LPR5-MSFT-Ind009	1	Tissue	X	Χ	X	Х	Х	
9/18/2009	13:50	LPR4-MDFT-Comp01	1	Tissue	X	X	X	Х	Х	
9/18/2009	10:35	LPR5-MDFT-Comp02	1	Tissue	X	Χ	X	Χ	Х	
9/10/2009	8:40	LPR8-MDFT-Comp03	1	Tissue	X	X	X	X	X	
8/25/2009	9:54	LPR6-ELCT-Ind001	1	Tissue	X	Х	X	Х	Х	
9/19/2009	9:35	LPR5-MSCT-Comp01	1	Tissue	X	Χ	X	Х	Х	
9/8/2009	10:09	LPR8-MSCT-Ind002	1	Tissue	X	Х	X	X	X	
	, 1	Total Number of Containers	10	Purchase Or	der / State	ment of W	ork # CAS	09_01LPR		
1) Released by: Company Date/Time: Rec'd by: Company: Date/Time:	\$ 15 13	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Specimens Analytical, therefore, s	orresponds to were grouped Alpha Analytic samples are re	the earliest coll I together into o al processed an	Windward Environmental. The collection date ected individual specimen within the composite. composites by Windward onsite at Alpha id homogenized the individuals and composites; a Analytical. Sample names indicate whether the ie (Comp).

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	/Ward
V V A	environmental LLC

To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 6-(0-(0	Laboratory W.O. #: <i>K1806037</i>
Condition upon receipt:	Time of receipt: 1000
Cooler temperature: _ 08° C	Received by:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue Project Number: 09.58.02.31		To: Alpha Analyti				lytical	rtical COC reference: # LPR-C					
			Attn: Elle			s		Ship	oping Date: 06/09/2010			
Contact Name:	Je	ennifer Parker		Shipper:	U	PS			Airb	oill Number: 1 <u>2 19E18E 01 4134 942</u>		
Sampled By:	V	Vindward Environmental LLC	-	Form filled out by	: <u>Je</u>	Jennifer Parker/Dianne Janak			Turi	Turnaround requested: Standard		
					T	est(s) Reque	ested (check t	est(s) require	d)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
9/18/2009	10:35	LPR5-MSCT-Ind009	1	Tissue	Х	Х	X	Х	Х	Comments / Instructions [lar tag number(s)]		
9/18/2009	13:50	LPR4-MDCT-Comp01	1	Tissue	X	X	X	Х	Х			
9/18/2009	10:35	LPR5-MDCT-Comp02	1	Tissue	X	X	X	Х	Χ			
9/10/2009	8:40	LPR8-MDCT-Comp03	1	Tissue	X	X	X	Х	Х			
		Total Number of Containers	4	Purchase Orc	ler / State	ment of V	Vork # CAS	09_01LPR				
1) Released by: Company: Date/Time: Rec'd by: 2) Released by: Company: Date/Time: Rec'd by:			3) Released by: Company: Date/Time: Rec'd by:			and time c Specimens Analytical. therefore,	orresponds to were grouped Alpha Analytic	the earliest co I together into al processed a leased by Alpl	w Windward Environmental. The collection date obliected individual specimen within the composite. It is composited to composite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).			

Company:

Date/Time:



Company:

Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Company:

Date/Time:

To be compl	leted by Laboratory upon sample receipt:						
Date of receipt:: 6-1010	Laboratory W.O. #: <i>K1006037</i>						
Condition upon receipt: Good	Time of receipt: (000						
Cooler temperature: - 0,8°C	Received by:						

___ of ___ CH/

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					To: Columbia			a Analytical			# LPR-CAS-ET	
Project Number: 09.58.02.31 Contact Name: Jennifer Parker			Attn:		Lynda Hu	ıckestein		Shipping Date: 06/09/2010				
			Shipper:		UPS			Airbill Number: 1219E18E 014134 942				
Sampled By:	Th	nai Do, Ar	ngelita Rodriquez		Form filled ou	ıt by:	Jennifer F	Parker/Ellen C	ollins	Turnaro	und requested: Standard	
							Test(s) Requ	uested (check test	(s) required)			
						1_				į		
						Lipids(Bligh-						
Sample Collection				# of)sbic	3					
Date (m/d/y)	Time	Sa	mple Identification	Containers	Matrix	<u> </u>	S				Commonts / Instructions	
5/25/2010	17:40	LPR2-FH	IET-Comp01	1	Tissue	Х					Comments / Instructions) g prior to homogenization [lar rag number(s)]	
5/25/2010	17:50		IET-Comp02	1	Tissue	Х					g prior to homogenization	
5/25/2010	18:00		IET-Comp03	1	Tissue	X				1 .	g prior to homogenization	
5/25/2010	18:10		IET-Comp04	1	Tissue	Х				i	g prior to homogenization	
5/25/2010	18:20		IET-Comp05	1	Tissue	Х					g prior to homogenization	
5/25/2010	18:30		IET-Comp06	1	Tissue	Х					g prior to homogenization	
5/25/2010	18:40		IET-Comp07	1	Tissue	X					g prior to homogenization	
5/25/2010	18:50		IET-Comp08	1	Tissue	X				6.0	g prior to homogenization	
5/25/2010	19:00		IET-Comp09	1	Tissue	Х				5.5	5 g –prior to homogenization.	
5/25/2010	19:10		IET-Comp10	1	Tissue	Х				6.0	g prior to homogenization	
3/20/2010			nber of Containers	10 of 10	Purchase Ord	ler / Sta	tement of W	ork # CAS09_01	LPR			
1) Released by:			2) Released by:		3) Released by:			4) Released by:			Egg composites were created in the field facility by Windward staff. Composites we	
1//	19		-/ <u></u>								homogenized at Alpha Analytical,	
Company	Company:			Company:			Company:			therefore, samples are released by Alpha Analytical.		
Date/Time: Rec'd by: Rec'd by:			Date/Time:			Date/Time:			, way crean			
			Rec'd by:			Rec'd by:						
UF	25											
Company:			Company:		Company: Date/Time:			Company: Date/Time:				
Date/Time:			Date/Time:		Date/ Inne.			1 2410,			i	

Ward environmental LLC

To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 6-10-10	Laboratory W.O. #: K106040
Condition upon receipt: 6004	Time of receipt:
Cooler temperature: — 0.8°C	Received by: AJTF CAS

1 0	f <u>1</u>	CHA	IN-OF	-CUSTO	DY/1	EST F	REQUI	EST FO	DRM
Project/Client N	ame Pi	assaic RI/FS Tissue		To:	C	olumbia A	nalytical		COC reference # LPR-CAS-RB4
Project Number:		9.58.02.31		Attn:		nda Huck			Shipping Date: 06/15/2010
Contact Name:		ennifer Parker		Shipper:	U	PS			Airbill Number: 12/9E78E01 422
Sampled By:		indward Environmental LLC		Form filled out by:		ennifer Par	ker/Ellen (Collins	Turnaround requested: Standard
					T	est(s) Reques	sted (check to	est(s) required))
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
6/15/2010				X	Х	Х	Х	Comments / Instructions [lar tag number(s)]	

					1000				
						1			
Total Number of Containers		2	Purchase Order / Statement of Work # CAS09_011						
1) Released by:	ž.	2) Released by:		3) Released by:			NOTES		
Company: Date/Time: Date/Time:			Company:						
Rec'd by:	6/15/10 1980			Rec'd by:					
Company:	<u>ر</u>	Company:		Company:					



To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 6-16-10	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature: -0.6°C #284	Received by: 41 CAS

1	of	2

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

KBO 6240

LPR-CAS-WB-A

Project Number:	_09	.58.02.31			Attn: Lynda Huckestein					Shipping Date: 06/16/2010 4173		
Contact Name:	tact Name: Jennifer Parker				Shipper: UPS			Airb	oill Number:	1219E18E01 435		
Sampled By:	W	indward E	Environmental LLC		Form filled out by:	Je	ennifer Par	ker/Diann	e Janak	Turi	naround rec	quested: Standard
									V 25,000	270000000000		
				,		T	est(s) Reques	sted (check t	est(s) require	·	_	
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	(Comments / Instructions [Jar tag number(s)]
8/11/2009	9:25	LPR3-CC	WB-Ind002	1	Tissue	Х	X	X	Х	Х		
8/15/2009	8:50	LPR3-CC	LPR3-CCWB-Ind005		Tissue	X	Х	X	Х	Х		
8/19/2009	10:03	LPR5-CCWB-Ind011		1	Tissue	X	Х	Х	Х	X		
8/25/2009	7:30	LPR6-CCWB-Ind021		1	Tissue	Х	Х	X	Х	Х		
8/25/2009	8:43	LPR6-CCWB-Ind028		1	Tissue	X	Х	Х	Х	X		
8/25/2009	11:33	LPR7-CCWB-Ind042		1	Tissue	Х	Х	Х	Х	Х		
8/27/2009	9:01	LPR7-CC	WB-Ind069	1	Tissue	Х	Х	X	X	X		
9/12/2009	7:58	LPR8-CC	WB-Ind139	1	Tissue	Х	Х	Х	Х	Х		
9/12/2009	10:57	LPR8-CCWB-Ind147		1	Tissue	Х	Х	Х	Х	Х		
9/18/2009	10:35	LPR5-CC	WB-Ind160	1	Tissue	X	X	X	Х	Х		
	٦	Γotal Num	nber of Containers	10 of 18	Purchase Order / Statement of Work # CAS09_01LPR							
1) Released by: 2) Released by: Company: Date/Time: Rec'd by:				3) Released by: Company: Date/Time: Rec'd by:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).					
Company: Company: Date/Time: Date/Time:					Company: Date/Time:							



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 To be completed by Laboratory upon sample receipt:

COC reference

Date of receipt:: 6-17-10	Laboratory W.O. #;
Condition upon receipt: Good	Time of receipt: 940
Cooler temperature: ~5 , 1° C	Received by: AL CAS
V1169	,

2	of	2
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Project/Client Name: Passaic RI/FS Tissue 09.58.02.31			To:			Alpha Analytical				COC reference: # LPR-CAS-WB-B		
			2.31		Attn:	n: Ellen Collins			Ship	ping Date:	06/16/2010	
Contact Name: Jennifer Parket		Parker		Shipper:	U	PS			Airb	ill Number:	1219E18E 01 4173 55	
Sampled By:	_	Windwa	rd Environmental LLC		Form filled out by	r: Je	ennifer Pa	rker/Diann	e Janak	Turi	naround requ	ested: Standard
						Test(s) Requested (check test(s) required)					1.00	
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	1	mments / Instructions [Jar tag number(s)]
9/18/2009	13:50	LPR4	I-CCWB-Ind175	1	Tissue	Х	Х	Х	Х	Х		
9/19/2009	12:10	LPR4	I-CCWB-Ind186	1	Tissue	Х	Х	Х	Х	Х		
8/12/2009	9:27	LPR3	3-ANWB-Ind001	1	Tissue	Х	Х	X	Х	Х		
8/28/2009	8:05	LPR6	5-ANWB-Ind004	1	Tissue	Х	Х	X	Х	Х		
9/16/2009	10:08	B LPR4	I-ANWB-Ind007	1	Tissue	Х	Х	X	Х	Х		
8/28/2009	7:24	LPR6	5-ANWB-Ind003	1	Tissue	Х	Х	X	Х	Х		
8/29/2009	11:01	LPR6	5-ANWB-Ind005	1	Tissue	X	X	X	Х	Х		
8/29/2009	11:44	LPR7	7-ANWB-Ind006	1	Tissue	Х	X	Х	Х	Х		
		Total N	Number of Containers	8 of 18	Purchase Ord	ler / State	ment of W	ork # CAS	09_01LPR			
1) Released by: Company: Date/Time: Rec'd by: 2) Released by: Company: Date/Time: Rec'd by:				3) Released by: Company: Date/Time: Rec'd by:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).					
Company: Company: Date/Time: Date/Time:				Company: Date/Time:								



To be complete	eted by Laboratory upon sample receipt:
Date of receipt:: $G-17-10$	Laboratory W.O. #:
Condition upon receipt: Good L	Time of receipt: 940
Cooler temperature: -5.1°C	Received by: 4

1 of 2

Columbia Analytical

LPR-CAS-CF-A

COC reference

Project/Client Nan	ne: Pa	ssaic RI/FS Tissue		То:	Analytical COC reference # LPR-CAS-CF-A							
Project Number:	09	.58.02.31		Attn: Lynda Huckestein					Shipping Date: 06/16/2010			
Contact Name:	Je	nnifer Parker		Shipper:	_UF	<u> </u>	Airbill Number: 12 19E 18E 01 4264 6					
Sampled By: Windward Environmental LLC				Form filled out by: Jennifer Pa			rker/Diann	e Janak	Turn	around requested: Standard		
					Te	est(s) Reque	sted (check to	est(s) require	d)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 0020)	Metals (Se, 7742)			
8/11/2009	9:25	LPR3-CCFT-Ind001	1	Tissue	X	Х	X	X	Х	Comments / Instructions [Jar tag_number(s)]		
8/15/2009	8:50	LPR3-CCFT-Ind004	1	Tissue	X	Х	X	X	X	-		
8/25/2009	9:54	LPR6-CCFT-Ind032	1	Tissue	X	Х	X	X	Х			
8/27/2009	9:01	LPR7-CCFT-Ind068	1	Tissue	X	X	X	X	Х			
8/28/2009	9:32	LPR7-CCFT-Ind092	1	Tissue	X	X	X	X	Х			
8/29/2009	8:10	LPR6-CCFT-Ind104	1	Tissue	X	X	X	X	Х			
9/8/2009	7:48	LPR8-CCFT-Ind121	1	Tissue	X	X	X	X	Х			
9/9/2009	9:15	LPR8-CCFT-Ind131	1	Tissue	X	X	X	X	X			
9/17/2009	10:49	LPR4-CCFT-Ind155	1	Tissue	X	X	X	X	Х			
9/17/2009	11:05	LPR4-CCFT-Ind156	1	Tissue	X	X	X	X	Х			
		Total Number of Containers	10 of 12	Purchase Ord	der / State	ment of V	Vork # CAS09_01LPR					
1) Released by: Company Date/Time: Company: Date/Time:		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).								



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt:: 6 - 17 - 10	Laboratory W.O. #:
Condition upon receipt: 500	Time of receipt: 940
Cooler temperature: _3.4° C	Received by: CAS

To be completed by Laboratory upon sample receipt:

2	of	2
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Passaic RI/FS Tissue

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

14006286

LPR-CAS-CF-B

06/16/2010

COC reference:

Time of receipt:

Received by:

Project Number:	09.	58.02.31		Attn: Lynda Huckestein					Shipping Date: 06/16/2010				
Contact Name:	Jei	nnifer Parker		Shipper:	_UP				Airbill Number: 12.19.57.85.01.4264.628				
Sampled By:	Wi	ndward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak					Turnaround requested: Standard				
					Te	st(s) Reque	ested (check t	est(s) require					
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions			
9/19/2009	11:00	LPR5-CCFT-Ind181	1	Tissue	X	X	X	X	X	[lar tag number(s)]			
9/19/2009	11:33	LPR5-CCFT-Ind184	1	Tissue	X	X	X	X	X				
		Total Number of Containers	2 of 12	Purchase Orde	er / State	nent of V	Nork # CAS	09_01LPR					
1) Released by: 2) Released by: Company: Date/Time: Rec'd by:			3) Released by: Company: Date/Time: Rec'd by:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).							
Company: Company: Date/Time:				Company: Date/Time:									
	/	200 West M	ercer Street	Date of r	receipt:: /	S-17			ed by Lab	oratory upon sample receipt: O. #:			

Condition upon receipt:

Cooler temperature:

1	of	1

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K100674

COC reference

LPR-CAS-RB5

Project Number: Contact Name: Sampled By:	Jei	58.02.31 nnifer Par ndward E	ker Invironmental LLC	Attn: Lynda Huckestein Shipper: UPS Form filled out by: Jennifer Parker/Ellen Collins						Airb	pping Date: ill Number: naround requ		18E 01 43169
							Test(s) Reque	sted (check t	1	d)			
Sample Collection Date (m/d/y)	Time	Sar	nple Identification	# of Containers	Matrix	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			MANA NATIONAL PROPERTY OF THE	Instructions
6/29/2010	LPR-062910-RB 2			2	Water	X	X	X	X				umber(s)]
											LAUS		
												· · · · · · · · · · · · · · · · · · ·	

	7	otal Num	ber of Containers	2	Purchase Order / Statement of Work # CAS09_01LPR								
1) Released by:	6		2) Released by:		3) Released by	:		NOTES					
Company	HA.		Company:		Company:								
Date/Time:	71.79 - 1.616 16	γ	Date/Time:	00	Date/Time:								
Reg'd by:	P5	received of	Rec'd by:		Rec'd by:					•			
Company: Date/Time:			Company: Date/Time:	0 0150	Company: Date/Time:								
<u> </u>				4 3	To be	complete	d by Lab	oratory u	oon sar	nple receipt:			
	\ v	7 1	200 West M Suite 401		Date	of receipt::	6/30/14)·	La	boratory W.	O. #:		/ A
V VIII	Ward Seattle, WA 98119 Tel: (206) 378-1364					ition upon re	~ ·	rod		me of receip	t: 045	111	
_			Fax: (206) 21	./-9343	Coole	er temperatu	re: _//_	/	Re	ceived by:	AAILL	KV -	

1	of	4
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Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical



COC reference

LPR-CAS-CATF-A

Project Number:	Та	sk 16.1 (09.58.02.31)		Attn:	Ly	Lynda Huckestein				pping Date:	07/0	08/2010
Contact Name:	Je	nnifer Parker		Shipper:	UF	PS			Airb	oill Number:	12196	E18E01 423520
Sampled By:	Wi	Windward Environmental LLC			Form filled out by: Jennifer Pa			e Janak	Turi	naround rec		Standard
					Test(s) Requested (check test(s) required)							
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
9/12/2009	9:35	LPR8-WSFT-Ind009	1	Tissue	X	Х	Х	Х	Х			s / Instructions number(s)]
9/12/2009	11:16	LPR8-WSFT-Ind013	1	Tissue	Χ	Х	X	Χ	Х			```
9/15/2009	8:34	LPR5-WSFT-Ind019	1	Tissue	Χ	Χ	X	X	Χ			
9/18/2009	11:57	LPR5-WSFT-Ind020	1	Tissue	Χ	Х	X	Χ	Х			
9/18/2009	14:10	LPR4-WSFT-Ind023	1	Tissue	Χ	Χ	X	Χ	Χ			
8/18/2009	8:15	LPR5-IPFT-Ind001	1	Tissue	Χ	Χ	X	Χ	X			
8/25/2009	7:17	LPR6-IPFT-Ind003	1	Tissue	Χ	Χ	X	Χ	X			
8/26/2009	8:29	LPR6-IPFT-Ind004	1	Tissue	Χ	Χ	X	Χ	X			
8/26/2009	10:18	LPR7-IPFT-Ind005	1	Tissue	Χ.	X	Х	Х	Χ			
8/27/2009	9:34	LPR7-IPFT-Ind006	1	Tissue	Χ	Х	X	Х	Χ			
	1	Total Number of Containers	10 of 35	Purchase Ord	er / State	ment of W	ork # CASO	9_01LPR				
1) Released by: Company: Date/Firne: Rec'd by: Company: Date/Time:	4 1110 1110	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	Vais 1010	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. of therefore, s	orresponds to were grouped Alpha Analytic	the earliest co together into al processed a eased by Alph	ollected individual composites land homogen ha Analytical.	dual specir by Windwa ized the in	tal. The collection date men within the composite. ard onsite at Alpha idividuals and composites; mes indicate whether the
							To be	complete	d by Lab	oratory ι	ipon sa	mple receipt:

Ward environmental LLC

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Project Number:

Passaic RI/FS Tissue

Task 16.1 (09.58.02.31)

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Attn:

Columbia Analytical

Lynda Huckestein

K1007100

07/08/2010

COC reference: # LPR-CAS-CATF-B

Shipping Date:

Laboratory W.O. #:

Time of receipt:

Received by:

Contact Name:	Jei	nnifer Parker	Shipper: UPS					Airbill Number: [Z 9678E 014235 205					
Sampled By:	mpled By: Windward Environmental LLC				form filled out by:		nnifer Par	ker/Dianne	Turr	naround requested: Standard			
				Te	st(s) Reque	sted (check te	est(s) require	ed)					
Sample Collection Date (m/d/y)	Time	Sample Identifica	ition	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
9/9/2009	9:15	LPR8-IPFT-Ind008		7	Tissue	Χ	Х	Х	Х	Х	Comments / Instructions [Jar tag. number(s)]		
9/9/2009	9:15	LPR8-IPFT-Ind009		1	Tissue	Χ	Χ	Х	Χ	Χ			
9/10/2009	13:02	LPR8-IPFT-Ind010		1	Tissue	Χ	X	X	Χ	X			
9/10/2009	13:02	LPR8-IPFT-Ind011		1	Tissue	Χ	X	X	Χ	X			
9/10/2009	13:02	LPR8-IPFT-Ind012		1	Tissue	X	X	X	Х	X			
9/10/2009	13:02	LPR8-IPFT-Ind013]	Tissue	Х	X	X	Χ	Х			
8/11/2009	11:08	LPR3-ACFT-Ind001		1	Tissue	X	X	X	Х	Х			
8/11/2009	11:30	LPR3-ACFT-Ind002	<u> </u>	1	Tissue	X	X	X	X	Х			
8/13/2009	10:26	LPR3-ACFT-Ind003	3	1	Tissue	Х	X	X	X	X			
8/14/2009	9:04	LPR3-ACFT-Ind005	i	1	Tissue	X	X	X	X	X			
	T	otal Number of Cont	ainers	10 of 35	Purchase Order / Statement of Work # CAS09_01LPR								
1) Released by: Company: Date/Time: Company: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time:				mols 1010	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).					
			1 7					To be	complete	d by Lab	oratory upon sample receipt:		
	1	200	West Merc	er Street									

Date of receipt::

Condition upon receipt:

Cooler temperature:

<u>3</u> o	f <u>4</u>	CHA	IN-OF	-CUSTO	DY/T	EST I	REQUI	EST F	ORM	14007/02		
Project/Client Na	ame: Pa	assaic RI/FS Tissue		То:	C	olumbia <i>l</i>	Analytical		coc	reference: # LPR-CAS-CATF-C		
Project Number:	Ta	ask 16.1 (09.58.02.31)		Attn: Lynda Hucke			kestein Shipping Dat			ping Date: 07/08/2010		
Contact Name:		Shipper:	U	PS			 Airbil	Number: 1219E78E014235 205				
Sampled By: Windward Environmental LLC				Form filled out by:	: <u>J</u> e	nnifer Pa	rker/Diann	e Janak	Turna	Turnaround requested: Standard		
					Т	est(s) Reque	ested (check to	est(s) require				
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
8/19/2009	10:51	LPR5-ACFT-Ind006	1	Tissue	X	X	X	Х	Х	Comments / Instructions [Jar tag number(s)]		
8/25/2009	8:25	LPR6-ACFT-Ind008	1	Tissue	Χ	X	X	Х	Х			
8/25/2009	8:25	LPR6-ACFT-Ind009	1	Tissue	X	X	X	X	Х			
8/26/2009	7:55	LPR6-ACFT-Ind010	1	Tissue	Χ	X	X	X	X			
8/27/2009	7:27	LPR6-ACFT-Ind013	1	Tissue	X	X	X	X	Х			
8/27/2009	9:48	LPR7-ACFT-Ind014	1	Tissue	Χ	X	X	X	Х			
8/29/2009	11:11	LPR6-ACFT-Ind016	1	Tissue	Χ	X	X	Х	Х			
8/29/2009	12:06	LPR7-ACFT-Ind017	1	Tissue	Χ	X	X	Х	Х			
9/2/2009	14:13	LPR2-ACFT-Ind018	1	Tissue	X	X	X	X	Х			
9/8/2009	8:04	LPR8-ACFT-Ind019	1	Tissue	X	X	X	Х	Х			
	æ"	Total Number of Containers	10of 35	Purchase Ord	er / State	ment of W	Vork # CAS	09_01LPR				
1) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	1110 5	2) Released by: Company: Date/Time: Company: Date/Time:	llani × 1010	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. of therefore, s	orresponds to were grouped Alpha Analytic samples are rel	the earliest coll I together into c al processed an	Windward Environmental. The collection date ected individual specimen within the composite composites by Windward onsite at Alpha id homogenized the individuals and composites a Analytical. Sample names indicate whether the se (Comp).		
			, ,				To be	complete	ed by Labo	ratory upon sample receipt:		



	7 1
Date of receipt::	2000,000,000
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

4 0	f _4_	CHA	IN-OF-	CUSTO	DY/T	EST I	REQU	EST F	ORM	K1007/02
Project/Client Na	ame: P a	assaic RI/FS Tissue		Го:	C	olumbia <i>l</i>	Analytical		COO	reference: # LPR-CAS-CATF-D
Project Number:		ask 16.1 (09.58.02.31)	·············	Attn:	Ly	nda Huck	estein		Ship	oping Date: 07/08/2010
Contact Name:		ennifer Parker		Shipper:	UI	PS			Airb	ill Number: 1219E/8E 014235 205
Sampled By: Windward Environmental LLC			Form filled out by:	Je	nnifer Pa	rker/Diann	e Janak	Turi	naround requested: Standard	
					Т	est(s) Reque	sted (check t	est(s) require		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	Comments / Instructions
9/8/2009	8:44	LPR8-ACFT-Ind020	1	Tissue	Х	X	X	X	X	[lar tag number(s)]
9/8/2009	8:44	LPR8-ACFT-Ind021	1	Tissue	X	X	X	X	X	
9/10/2009	13:02	LPR8-ACFT-Ind022]	Tissue	Х	X	X	X	X	
9/17/2009	11:05	LPR4-ACFT-Ind023	1	Tissue	Х	X	X	X	X	
9/18/2009	11:15	LPR5-ACFT-Ind024	1	Tissue	X	X	X	X	X	
					L.,		<u> </u>			
		Total Number of Containers	5 of 35	Purchase Ord	er / State	ment of V	Vork # CAS	09_01LPR		
1) Released by:		2) Released by:		3) Released by:			and time c	orresponds to	the earliest co	Windward Environmental. The collection date ollected individual specimen within the composite.
Company:	WA	Company:		Company:			Specimens	were grouped Alpha Analytic	d together into	o composites by Windward onsite at Alpha and homogenized the individuals and composites;
Date/Time:	1711 1 8 -] [] [E	Date/Time:	0	Date/Time:			therefore,	samples are re	leased by Alp	ha Analytical. Sample names indicate whether the
Rec'd by:	> /// C	Rec'd by: Ulla	Smith	Rec'd by: Company:			sample is a	an individual (I	na) or compo:	site (Comp).
Company: Date/Time:		Company: Date/Time:	0 1570	Date/Time:						



To be comple	eted by Laboratory upon sample receipt:
Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

4	of	4
1	O i	4

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

1607103 #LPR-CAS-CATC-A

COC reference

Project Number:	Ta	ask 16.1 (09.58.02.31)		Attn:	Ly	nda Huck	kestein		Ship	pping Date: 07/08/2010		
Contact Name: Jennifer Parker				Shipper:	_UF	UPS				Airbill Number: 1219EBE 014368 1660		
Sampled By: Winc		indward Environmental LLC		Form filled out by	y: <u>Je</u>	nnifer Pa	rker/Diann	e Janak	Tur	naround requested: Standard		
					Te	est(s) Reque	ested (check t	est(s) require	ed)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
9/12/2009	9:35	LPR8-WSCT-Ind009	1	Tissue	Х	Х	Х	Х	Х	Comments / Instructions [Jar tag number(s)]		
9/12/2009	11:16	LPR8-WSCT-Ind013	1	Tissue	X	Х	Х	Х	Χ	, , , , , , , , , , , , , , , , , , , ,		
9/15/2009	8:34	LPR5-WSCT-Ind019	1	Tissue	X	Х	Х	X	Х			
9/18/2009	11:57	LPR5-WSCT-Ind020	1	Tissue	Х	Х	Х	Х	Х			
9/18/2009	14:10	LPR4-WSCT-Ind023	1	Tissue	X	Х	X	Х	Х			
8/18/2009	8:15	LPR5-IPCT-Ind001	1	Tissue	Х	Х	Х	Х	Х			
8/25/2009	7:17	LPR6-IPCT-Ind003	1	Tissue	X	Х	X	Х	Х			
8/26/2009	8:29	LPR6-IPCT-Ind004	1	Tissue	Х	Х	Х	Х	Х			
8/26/2009	10:18	LPR7-IPCT-Ind005	1	Tissue	X	Х	X	Х	Х			
8/27/2009	9:34	LPR7-IPCT-Ind006	1	Tissue	Х	Х	Х	Х	X			
		Total Number of Containers	10 of 35	Purchase Or	der / State	ment of V	Vork # CAS	09_01LPR				
1) Released by: Company: Date/Fime: Rec'd by:	<u>I</u> 1 1120	2) Released by: Company: Date/Time: Rec'd by:	Va.	3) Released by: Company: Date/Time: Rec'd by:			and time of Specimens Analytical, therefore, s	orresponds to were grouped Alpha Analytic	the earliest co together into al processed a eased by Alph	w Windward Environmental. The collection date oblected individual specimen within the composite. To composite specimen within the composite of composites and homogenized the individuals and composites; has Analytical. Sample names indicate whether the site (Comp).		

Company:

Date/Time:



Company:

Date/Time:

To be compl	leted by Laboratory upon sample receipt:								
Date of receipt::	Laboratory W.O. #:								
Condition upon receipt:	Time of receipt:								
Cooler temperature:	Received by:								

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

10007103

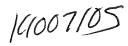
COC reference: # LPR-CAS-CATC-B

Project Number:	<u>Ta</u>	sk 16.1 (09.58.02.31)	Attn: Lynda			nda Huck	Huckestein			Shipping Date:07/08/2010	
Contact Name:	Jennifer Parker			Shipper: UPS				Airb	oill Number: 1219E18E 01 4368 1660		
Sampled By:	By: Windward Environmental LLC			Form filled out by	/: <u>Je</u>	nnifer Pai	rker/Diann	e Janak	Turi	naround requested: Standard	
					Те	est(s) Reque	sted (check to	est(s) require	ed)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)		
9/9/2009	9:15	LPR8-IPCT-Ind008	1	Tissue	X	X	X	Х	X	Comments / Instructions [Jar tag number(s)]	
9/9/2009	9:15	LPR8-IPCT-Ind009	1	Tissue	X	Х	X	Х	X		
9/10/2009	13:02	LPR8-IPCT-Ind010	1	Tissue	X	X	X	Х	X		
9/10/2009	13:02	LPR8-IPCT-Ind011	1	Tissue	X	X	X	X	X		
9/10/2009	13:02	LPR8-IPCT-Ind012]	Tissue	Х	X	X	X	X		
9/10/2009	13:02	LPR8-IPCT-Ind013	1	Tissue	X	X	X	Х	Х		
8/11/2009	11:08	LPR3-ACCT-Ind001	1	Tissue	Х	Х	X	Х	Х		
8/11/2009	11:30	LPR3-ACCT-Ind002	1	Tissue	X	X	X	X	X		
8/13/2009	10:26	LPR3-ACCT-Ind003	1	Tissue	Х	X	X	Χ	X		
8/14/2009	9:04	LPR3-ACCT-Ind005	1	Tissue	X	Х	X	X	X		
		Total Number of Containers	10 of 35	Purchase Ord	der / Stateı	ment of W	ork # CAS	09_01LPR			
1) Released by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s	orresponds to were grouped Alpha Analytic amples are rel	the earliest co I together into al processed a	Windward Environmental. The collection date illected individual specimen within the composite. composites by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the ite (Comp).	
							To be	complete	d by Lab	oratory upon sample receipt:	



Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

3 01 4	3	of	4
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Project/Client Name	: Pa	assaic RI/FS Tissue		To:	_C	olumbia <i>i</i>	Analytical		coc	reference: # LPR-CAS-CATC-C
Project Number: Task 16.1 (09.58.02.31)				Attn: Lynda Huckestein				Ship	Shipping Date: 07/08/2010	
Contact Name: Jennifer Parker				Shipper:	U	PS		A		irbill Number: 1219E18E014368 11d60
Sampled By: Windward Environmental LLC			Form filled out by	J∈	nnifer Pa	rker/Diann	e Janak	Turn	around requested: Standard	
		T	I	T						
					Т	T -	ested (check t	T		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
8/19/2009	10:51	LPR5-ACCT-Ind006	1	Tissue	X	Х	X	Х	Х	Comments / Instructions [Jar tag number(s)]
	8:25	LPR6-ACCT-Ind008	1	Tissue	Х	X	X	Х	X	[ming manna ()]
	8:25	LPR6-ACCT-Ind009	1	Tissue	X	Х	X	X	X	
	7:55	LPR6-ACCT-Ind010	1	Tissue	X	Х	Х	Х	Х	
	7:27	LPR6-ACCT-Ind013	1	Tissue	Χ	X	Х	X	Х	
	9:48	LPR7-ACCT-Ind014	1	Tissue	X	X	X	X	X	
8/29/2009	11:11	LPR6-ACCT-Ind016	1	Tissue	X	X	X	Х	X	
8/29/2009	12:06	LPR7-ACCT-Ind017	1	Tissue	X	X	X	X	Х	
9/2/2009	14:13	LPR2-ACCT-Ind018	1	Tissue	X	Х	X	Х	X	
9/8/2009	8:04	LPR8-ACCT-Ind019	1	Tissue	X	X	X	X	X	
		Total Number of Containers	10of 35	Purchase Ord	er / State	ment of V	Vork # CAS	09_01LPR		
1) Released by: Company Date/Time: Company: Date/Time:	20	2) Released by: Company: Date/Time: Rec'd by: Company: Company: Date/Time:	lai	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time c Specimens Analytical. therefore,	orresponds to were grouped Alpha Analytic samples are re	the earliest cold together into al processed ar	Windward Environmental. The collection date lected individual specimen within the composite composites by Windward onsite at Alpha nd homogenized the individuals and composites a Analytical. Sample names indicate whether the te (Comp).

Ward Ward environmental LLC

	to be compa	eted by Laboratory upon	sample receipt.
Date of receipt::		Laboratory W.O. #:	
Condition upon receipt:		Time of receipt:	
Cooler temperature:		Received by:	

4	of	4	CHA	IN-OF	-custo	DY/	TEST	REQU	EST F	ORM	K1807105
Project/Clien	nt Name	e: Pa	assaic RI/FS Tissue		То:	_(Columbia .	Analytical		coc	reference: # LPR-CAS-CATC-D
Project Num	ber:	Ta	ask 16.1 (09.58.02.31)		Attn:	l	.ynda Hucl	kestein		Ship	ping Date: 07/08/2010
Contact Nam	Contact Name: Jennifer Parker			Shipper:	Ī	JPS			Airbi	ill Number: 1219E18E61 4368 1660	
Sampled By:	Sampled By: Windward Environmental LLC			Form filled out by	r	lennifer Pa	rker/Diann	e Janak	Turn	around requested: Standard	
							Test(s) Reque	ested (check t	est(s) require		
Sample Collection Date (m/d/	n	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
9/8/20	9/8/2009 8:44 LPR8-ACCT-Ind020		1	Tissue	Х	X	X	X X	X	Comments / Instructions [Jar tag_number(s)]	
9/8/20		8:44	LPR8-ACCT-Ind021	1	Tissue	Х	X	X	X	Х	
9/10/20		13:02	LPR8-ACCT-Ind022	1	Tissue	Х	X	X	X	X	
	9/17/2009 11:05 LPR4-ACCT-Ind023		1	Tissue	X	X	X	X	X		
9/18/20	09	11:15	LPR5-ACCT-Ind024	1	Tissue	X	X	X	X	X	
	L.uu		Total Number of Containers	5 of 35	Purchase Orc	der / Sta	tement of V	Nork # CAS	09_01LPR		
1) Released by: 2) Released by: Company: Date/Time: Rec'd by: Rec'd by:		mith	Purchase Order / Statement of V 3) Released by: Company: Date/Time: Rec'd by:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).					

Company: Date/Time:



Company: Date/Time:

To be completed by Laboratory upon sample receip							
Date of receipt::	Laboratory W.O. #:						
Condition upon receipt:	Time of receipt:						
Cooler temperature:	Received by:						

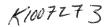
Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical



COC reference

LPR-CAS-PERF-A

Project Number:	Та	sk 16.1 (09.58.02.31)		Attn:	Ly	nda Huck	estein		Ship	ping Date: 07/13/2010
Contact Name:	Jei	nnifer Parker		Shipper:	UF	PS			Airb	ill Number: [219E7BE 01 4139 71
Sampled By:	Wi	ndward Environmental LLC	1	Form filled out by	: Je	nnifer Par	ker/Dianne	e Janak	Turr	naround requested: Standard
					Te	est(s) Reque	sted (check te	est(s) require		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,60108)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
8/11/2009	9:56	LPR3-MAFT-Comp02	1	Tissue	X	Х	Х	Х	Х	Comments / Instructions [Jar tag number(s)]
8/11/2009	10:08	LPR3-MAFT-Comp03	1	Tissue	X	Χ	X	Χ	Χ	
8/12/2009	9:24	LPR3-MAFT-Comp04	1	Tissue	Χ	Χ	Х	X	Χ	
8/13/2009	10:00	LPR3-MAFT-Comp05	1	Tissue	X	Х	Х	Х	Χ	
8/13/2009	11:52	LPR3-MAFT-Comp07	1	Tissue	X	Х	Х	Х	Χ	
8/13/2009	11:52	LPR3-MAFT-Comp08	1	Tissue	X	Χ	X	Х	X	
8/14/2009	8:44	LPR3-MAFT-Comp13	1	Tissue	Χ	Χ	X	Х	X	
8/25/2009	7:30	LPR6-MAFT-Comp24	1	Tiss∪e	X	Χ	X	Х	X	
8/25/2009	9:54	LPR6-MAFT-Ind122	1	Tissue	X	X	X	Х	X	
9/1/2009	13:10	LPR1-MAFT-Comp01	1	Tissue	X	Χ	X	Х	X	
	Т	otal Number of Containers	10 of 19	Purchase Ord	ler / Stateı	ment of W	ork # CASC	9_01LPR		
1) Released by: Company: Date/Time: Company: Date/Time:	J 1430	2) Released by: Company: Date/Time: Rec'd by: Company: CAS Date/Time: 7/14/10		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. A therefore, s	, orresponds to t were grouped Alpha Analytica	the earliest co together into al processed a eased by Alph	Windward Environmental. The collection date llected individual specimen within the composite. composites by Windward onsite at Alpha nd homogenized the individuals and composites; a Analytical. Sample names indicate whether the ite (Comp).
							To be	complete	d by Lab	oratory upon sample receipt:



Date of receipt:: 7 - 14-10	Laboratory W.O. #: <i>K100</i> 7Z 7 3
Condition upon receipt: 600	Time of receipt: 070
Cooler temperature: - 0, 7	Received by: 4/1 CAS

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K1007273

COC reference: # LPR-CAS-PERF-B

Project Number:	Та	sk 16.1 (09.58.02.31)		Attn:	L	ynda Huck	estein		Ship	oping Date: 07/13/2010
Contact Name:	Je	nnifer Parker	:	Shipper:	U	PS			Airb	oill Number: 1Z19 <u>08E 014139718</u>
Sampled By:	Wi	ndward Environmental LLC		Form filled out by	: <u>J</u> e	ennifer Par	ker/Dianne	e Janak	Turr	naround requested: Standard
						est(s) Reque	sted (check to	est(s) require	ed)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
9/10/2009	8:38	LPR8-MAFT-Comp26	1	Tissue	X	X	X	Χ	Х	Comments / Instructions [Jar tag number(s)]
9/10/2009	9:30	LPR8-MAFT-Comp31	1	Tissue	X	X	Х	X	X	-
9/12/2009	9:35	LPR8-MAFT-Comp27	1	Tissue	X	X	X	X	X	
9/18/2009	10:35	LPR5-MAFT-Comp20	1	Tissue	X	X	X	Х	Х	
9/18/2009	10:35	LPR5-MAFT-Comp21	1	Tissue	X	X	X	Х	Х	
9/18/2009	11:57	LPR5-MAFT-Comp22	1	Tissue	Х	X	Х	Х	X	
9/18/2009	13:50	LPR4-MAFT-Comp16	1	Tissue	Х	X	X	X	X	
9/18/2009	14:10	LPR4-MAFT-Comp17	1	Tissue	Χ	X	X	X	Х	
9/2/2009	15:46	LPR1-MAFT-Ind145	1	Tissue	X	X	X	Х	Х	
		Total Number of Containers	9 of 19	Purchase Ord	ler / State	ment of W	ork # CAS	09_01LPR		
1) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	Je 1430	2) Released by: Company: Date/Time: Rec'd by: Jone 5 Company: CA 5 Date/Time: 7/14/10	1030	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s	orresponds to were grouped Alpha Analytic samples are re	the earliest co I together into al processed a	Windward Environmental. The collection date oblected individual specimen within the composite. It is composited by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).
		200 Most M	_	[···			To be	complete	ed by Lab	oratory upon sample receipt:



Date of receipt:: 7 - 14 - 10	Laboratory W.O. #: <i>K100</i> 7273
Condition upon receipt: Cocd	Time of receipt: (030
Cooler temperature: - 0 . 7	Received by: A J CA 5

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Tel: (206) 378-1364

Fax: (206) 217-9343

Columbia Analytical

K1007273

COC reference

Received by:

LPR-CAS-RB6

Project Number: Contact Name: Sampled By:	Jer	nnifer Par	(Task 16.1) ker nvironmental LLC		Attn: Shipper: Form filled out b	UI	rnda Huck PS ennifer Par	estein ·ker/Ellen (Collins	Airbill	ing Date: Number: [round reque	07/13/2010 1 <u>Z (9E/8E 014</u> ested: Standard	1174 6
Sample Collection Date (m/d/y)	Time	Sam	nple Identification	# of Containers	Matrix	Butyltins (Krone)	Metals (s) (Sequence (c) (108)	Metals (ICP/MS, 9) pass 6020)	Metals (Se, 7742) (s))		nments / Instructions	
07/13/10	8:15	LPR-071	310-RB	2	Water	X	X	X	X			nments / Instructions (lar tag_number(s))	
1) Released by: Company: Date Time: Rec'd by: Company: Date/Time:	16 14 A 10 45	Total Num	ber of Containers 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: 7/14/10	2 '5 /030	Purchase Of 3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		ement of W	NOTES					
	$\sqrt{\mathbf{W}}$	⁷ ard	200 West Me Suite 401 Seattle, WA			of receipt::		(O	Lab).#: K100	oon sample receip 07273 うひ	9T:

Cooler temperature:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	To:	Columbia Analytical	COC reference	# LPR-CAS-PERWB-A
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Lynda Huckestein	Shipping Date:	07/13/2010
Contact Name:	Jennifer Parker	Shipper:	UPS	Airbill Number:	1219E18E014139 718;
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround requ	ested: Standard

_		_	_							
					Te	st(s) Reque	sted (check t	est(s) require		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
9/2/2009	15:46	LPR1-MACT-Ind145	1	Tissue	X	Х	X	Х	Х	Comments / Instructions [Jar tag number(s)]
8/11/2009	7:21	LPR3-MAWB-Comp06	1	Tissue	Х	Х	X	Х	Х	()
8/13/2009	11:52	LPR3-MAWB-Comp09	1	Tissue	X	Х	X	Х	Х	
8/13/2009	11:52	LPR3-MAWB-Comp10	1	Tissue	Х	Х	X	Х	Χ	
8/13/2009	11:52	LPR3-MAWB-Comp11]	Tissue	X	Χ	X	Х	Χ	
8/13/2009	11:52	LPR3-MAWB-Comp12	1	Tissue	X	Χ	X	Х	Χ	
8/13/2009	11:52	LPR3-MAWB-Comp30	1	Tissue	X	Х	X	X	Χ	
8/25/2009	11:09	LPR7-MAWB-Ind123]1	Tissue	X	Χ	X	X	X	
8/26/2009	10:37	LPR7-MAWB-Comp25	1	Tissue	X	X	X	Х	Х	
8/27/2009	6:56	LPR6-MAWB-Ind128	1	Tissue	X	X	X	Χ	X	
	Т	otal Number of Containers	10 of 19	Purchase Ord	der / Stater	nent of W	ork # CASO	09_01LPR		
1) Released by: Company: Date Time: Rec'd by: Company: Date/Time:	L 1430	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. of therefore, s	orresponds to were grouped Alpha Analytic	the earliest col together into al processed an eased by Alph	Windward Environmental. The collection date llected individual specimen within the composite. composites by Windward onsite at Alpha nd homogenized the individuals and composites; a Analytical. Sample names indicate whether the ite (Comp).



To be completed by	y Laboratory upon	sample receipt
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Date of receipt:: 7-14-10	Laboratory W.O. #: <i>K100</i> 7274
Condition upon receipt: Good	Time of receipt: 1030
Cooler temperature: $-0-7$	Received by: L 2 CAS

2	of	2	

Project/Client Name:	Passaic RI/FS Tissue	То:	Columbia Analytical	COC reference:	# LPR-CAS-PERWB-B
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Lynda Huckestein	Shipping Date:	07/13/2010
Contact Name:	Jennifer Parker	Shipper:	UPS	Airbill Number:	1219E18E 014139 7187
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround requ	rested: Standard

					Te	st(s) Reques	sted (check to	est(s) require		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,60108)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
9/1/2009	12:59	LPR1-MAWB-Ind138	1	Tissue	X	Χ	X	Х	Х	Comments / Instructions [Jar tag number(s)]
9/4/2009	11:25	LPR2-MAWB-Ind158	1	Tissue	X	Χ	Х	Х	Х	
9/7/2009	13:15	LPR8-MAWB-Comp32]	Tissue	X	Χ	Х	X	X	
9/12/2009	9:35	LPR8-MAWB-Comp28	1	Tissue	X	X	Х	Х	Х	
9/12/2009	9:35	LPR8-MAWB-Comp29	1	Tissue	X	Х	Х	Х	Х	
9/15/2009	9:23	LPR4-MAWB-Comp14	1	Tissue	X	Χ	X	X	Х	
9/17/2009	9:52	LPR5-MAWB-Comp19	1	Tissue	Х	Χ	X	X	Х	
9/17/2009	10:04	LPR5-MAWB-Comp18	1	Tissue	X	Χ	X	X	Х	
9/18/2009	11:57	LPR5-MAWB-Comp23	1	Tissue	X	Х	X	X	X	
9/18/2009	13:19	LPR4-MAWB-Comp15	1	Tissue	X	Χ	X	X	X	
	Т	otal Number of Containers	10 of 20	Purchase Ord	ler / Stater	nent of W	ork # CAS	09_01LPR		
1) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	1430	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s	orresponds to were grouped Alpha Analytic	the earliest co I together into al processed a leased by Alph	Windward Environmental. The collection date oblected individual specimen within the composite. It is composited by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).
Ĺ							To be	complete	ed by Lab	oratory upon sample receipt:



	, , , , , , , , , , , , , , , , , , ,
Date of receipt:: 7-14-10	Laboratory W.O. #: K1007274
Condition upon receipt: 600 d	Time of receipt: (3 3
Cooler temperature: - O, 7	Received by: // // // // A 5
	

1 of	1
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Project/Client Name: Passaic RI/FS Tissue			To:	Co	olumbia <i>A</i>	Analytical		COC reference # LPR-CAS-RB7					
Project Number	: <u> </u>	9.58.02.3	1 (Task 16.1)		Attn: Lynda Huckestein					Shipping Date: 07/19/2010			
Contact Name:	Contact Name: Jennifer Parker				Shipper:	UF	UPS				Airbill Number: 1219E78E 014333 8022 Turnaround requested: Standard		
Sampled By: Windward Environmental LLC				***************************************			rker/Ellen (Collins	Turnaroun				
						Te	est(s) Reque	sted (check to	est(s) required)				
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)				
7/19/2010	12:30	LPR-07	1910-RB	2	Water	X	Х	×	Х		Comments / In: [lar tag_num	- 1	
		Total Nun	nber of Containers	2	Purchase Or	der / State	ment of W	ork # CASC	9_01LPR				
1) Released by:	2/2		2) Released by:		3) Released by:			NOTES					
Company:	11		Company:		Company:								
Date/Time	1553	and the second s	Date/Time:	1 11	Date/Time:								
Rec'd by:			Rec'd by: HUGO	Smith	Rec'd by:			***************************************					
Company: Date/Time:			Company: Olum Date/Timey	Smith bia Aralyti	Company:								
			1 1/30/10	1000									
	1		200 West Me	arcer Street		Den Barri Mes Albrides		To be			ry upon samp	le receipt:	
			Cuito 101	JICCE JUICCE	Date of	f receipt::			Labor	atory W.O. #:			



	те при предостивни
Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

COC reference

LPR-CAS-EELF-A

1	of	4	
	•	4	

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

	Vindward Environ Sample Io	onmental LLC		Shipper: Form filled out by	Te	nnifer Par	ker/Dianne	est(s) require	Turr d)	ill Number: naround requ		78E 0/4/48 107 tandard
Time 8:00	Sample Io			Form filled out by	Te	est(s) Reques		est(s) require	d)	naround requ	ested: Si	tandard
8:00		dentification	# of				sted (check te					
8:00		dentification	# of		gh-	one)		. ~	2	i		1
	LPR3-ARET-Co		Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
8:50	I LI NO ANT I CO	mp20	1	Tissue	Х	Х	Х	Х	Х		mments / I [[ar tag nu	ii ii
0.00	LPR3-ARFT-Co	mp06	1	Tissue	Х	Х	Х	Х	Х			
9:13	LPR3-ARFT-Inc	d005	1	Tissue	Х	Х	X	Х	Х			
11:08	LPR3-ARFT-Co	mp05	1	Tissue	Х	Х	Х	Х	Х			
9:00	LPR3-ARFT-Inc	d010	1	Tissue	X	Х	Х	Х	X			
12:28	LPR3-ARFT-Inc	d014	1	Tissue	Χ	X	X	Х	X			
8:05	LPR5-ARFT-Co	mp09	1	Tissue	X	Х	Х	Х	X			
8:15	LPR5-ARFT-Inc	d021	1	Tissue	X	Х	X	Х	X			
8:42	LPR4-ARFT-Inc	d022	1	Tissue	X	Х	X					
12:30	LPR4-ARFT-Inc	d026	1	Tissue	Х	Х	X	Х	X			
7	Total Number o	of Containers	10 of 32	Purchase Ord	er / Stateı	ment of W	ork # CASC	9_01LPR				
// /630	Cor Dat Red	mpany: te/Time: c'd by: KMUS mpany: CAS	mith)	3) Released by: Company: Date/Time: Rec'd by: Company: Date Time:			and time co Specimens Analytical. A therefore, s	orresponds to were grouped Alpha Analytica amples are rel	the earliest co together into al processed a eased by Alph	ellected individe composites by and homogeniz na Analytical. S	ual specimen y Windward o zed the indivi	within the composite. onsite at Alpha duals and composites;
	9:13 11:08 9:00 12:28 8:05 8:15 8:42	9:13 LPR3-ARFT-Ind 11:08 LPR3-ARFT-Ind 11:08 LPR3-ARFT-Ind 12:28 LPR3-ARFT-Ind 8:05 LPR5-ARFT-Ind 8:42 LPR4-ARFT-Ind 12:30 LPR4-ARFT-Ind Total Number of	9:13 LPR3-ARFT-Ind005 11:08 LPR3-ARFT-Comp05 9:00 LPR3-ARFT-Ind010 12:28 LPR3-ARFT-Ind014 8:05 LPR5-ARFT-Comp09 8:15 LPR5-ARFT-Ind021 8:42 LPR4-ARFT-Ind022 12:30 LPR4-ARFT-Ind026 Total Number of Containers 2) Released by: Company: Date/Time: D	9:13 LPR3-ARFT-Ind005 1 11:08 LPR3-ARFT-Comp05 1 9:00 LPR3-ARFT-Ind010 1 12:28 LPR3-ARFT-Ind014 1 8:05 LPR5-ARFT-Comp09 1 8:15 LPR5-ARFT-Ind021 1 8:42 LPR4-ARFT-Ind022 1 12:30 LPR4-ARFT-Ind026 1 Total Number of Containers 10 of 32 2) Released by: Company: Date/Time: Rec'd by: August Martines Company: Com	9:13 LPR3-ARFT-Ind005 1 Tissue 11:08 LPR3-ARFT-Comp05 1 Tissue 9:00 LPR3-ARFT-Ind010 1 Tissue 12:28 LPR3-ARFT-Ind014 1 Tissue 8:05 LPR5-ARFT-Comp09 1 Tissue 8:15 LPR5-ARFT-Ind021 1 Tissue 8:42 LPR4-ARFT-Ind022 1 Tissue 12:30 LPR4-ARFT-Ind026 1 Tissue Total Number of Containers 10 of 32 Purchase Ord 2) Released by: Company: Date/Time: Rec'd by: Machine Rec'd by: Date/Time: Company: Date/Time: Rec'd by: Date/T	9:13	9:13	9:13 LPR3-ARFT-Ind005	9:13	9:13	9:13 LPR3-ARFT-Ind005	9:13 LPR3-ARFT-Ind005 1 Tissue X X X X X X X X X X X X X X X X X X X



To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 7/21/10	Laboratory W.O. #:
Condition upon receipt: Good	Time of receipt: / O (C)
Cooler temperature: 4.5	Received by:

Project/Client Name: Passaic RI/FS Tissue			То:			Analytical		COC reference: # LPR-CAS-EELF-B			
Tas	sk 16.1 (09.58.02.31)		Attn:	Ly	Lynda Huckestein				Shipping Date: 07/20/2010		
Jer	nnifer Parker		Shipper:	UI	UPS			Airbill Number: 12196786 01 4148 10			
Wi	ndward Environmental LLC		orm filled out by	: Je	nnifer Par	ker/Dianne	e Janak		naround requested: Standard		
				T	est(s) Reque	sted (check te	est(s) require				
Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
0:43	LPR5-ARFT-Comp12	1	Tissue	Х	×	X	Х	Х	Comments / Instructions [Jar tag number(s)]		
0:51	LPR5-ARFT-Ind030	1	Tissue	Х	Х	X	Х	Х			
2:44	LPR4-ARFT-Comp07	1	Tissue	Х	х	X	Х	Х			
2:44	LPR4-ARFT-Ind034	1	Tissue	Х	Х	X	Х	Х			
1:59	LPR5-ARFT-Comp10	1	Tissue	Х	Х	X	Х	Х			
2:25	LPR5-ARFT-Ind040	1	Tissue	Х	Х	X	Х	X			
3:39	LPR4-ARFT-Comp08	1	Tissue	X	Х	X	Х	Х			
4:42	LPR4-ARFT-Ind044	1	Tissue	Х	Х	Х	Х	Х			
1:56	LPR5-ARFT-Ind049	1	Tissue	Х	Х	Х	Х	X			
2:09	LPR5-ARFT-Ind048	1	Tissue	Х	X	X	Х	Х			
Т	otal Number of Containers	10 of 32	Purchase Orc	ler / State	ment of W	ork # CAS	09_01LPR				
1) Released by: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time: Date/Time:		Smoth 0 1010	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s sample is a	orresponds to were grouped Alpha Analytic amples are rel n individual (Ir	the earliest co I together into al processed a leased by Alpl nd) or compos			
	ime 0:43 0:51 2:44 1:59 2:25 3:39 4:42 1:56 2:09	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC Sample Identification 0:43	Task 16.1 (09.58.02.31) Jennifer Parker Sample Identification Windward Environmental LLC # of Containers 0:43 LPR5-ARFT-Comp12 1 0:51 LPR5-ARFT-Ind030 1 2:44 LPR4-ARFT-Comp07 1 2:44 LPR4-ARFT-Ind034 1 1:59 LPR5-ARFT-Ind034 1 2:25 LPR5-ARFT-Ind040 1 3:39 LPR4-ARFT-Comp08 1 4:42 LPR4-ARFT-Ind044 1 1:56 LPR5-ARFT-Ind049 1 2:09 LPR5-ARFT-Ind048 1 Total Number of Containers 10 of 32 2) Released by: Company: Company: Date/Time: Rec'd by: Hands Amadem	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC # of Containers D:43 LPR5-ARFT-Comp12 1 Tissue D:51 LPR5-ARFT-Ind030 1 Tissue D:44 LPR4-ARFT-Ind034 1 Tissue D:44 LPR4-ARFT-Comp07 1 Tissue D:45 LPR5-ARFT-Ind034 1 Tissue D:44 LPR4-ARFT-Ind034 1 Tissue D:44 LPR4-ARFT-Ind034 1 Tissue D:45 LPR5-ARFT-Ind040 1 Tissue D:46 LPR5-ARFT-Ind040 1 Tissue D:40 LPR5-ARFT-Ind044 1 Tissue Tissue Total Number of Containers 10 of 32 Purchase Orce Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Company: Company: Company: Date/Time: Rec'd by: Company: Comp	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31)	Task 16.1 (09.58.02.31) Jennifer Parker Windward Environmental LLC # of Containers Matrix Lynda Huckestein UPS Jennifer Parker/Dianne Janak Test(s) Requested (check test(s) require # of Containers Matrix LPR5-ARFT-Comp12 1 Tissue X X X X X 2:44 LPR4-ARFT-Comp07 1 Tissue X X X X X X 2:244 LPR4-ARFT-Comp10 1 Tissue X X X X X X X X 2:25 LPR5-ARFT-Ind034 1 Tissue X X X X X X 3:39 LPR4-ARFT-Comp08 1 Tissue X X X X X X X X X X X X X X X	Task 16.1 (09.58.02.31)		

Ward Ward environmental LLC

Date of receipt:: 7/21/10	Laboratory W.O. #:	
Condition upon receipt:	Time of receipt: 10	/6
Cooler temperature: 4,5	Received by: 5	W/

2	of	4
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C1007620

Project/Client Na	ıme: P a	assaic RI/FS Tissue		То:	(Columbia <i>A</i>	Analytical		COC	C reference: # LPR-CAS-EELF-B
Project Number:		ask 16.1 (09.58.02.31)			_ynda Huck	estein		Ship	oping Date: 07/20/2010	
Contact Name:		ennifer Parker			UPS				oill Number: 12196786 01 4148 10	
Sampled By: Windward Environmental LLC				Form filled out by	 : •	Jennifer Par	ker/Diann	e Janak		naround requested: Standard
Samplea by.										
						Test(s) Reque	sted (check to	est(s) require		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
8/19/2009	10:43	LPR5-ARFT-Comp12	1	Tissue	Х	X	X	Х	Х	Comments / Instructions [lar tag number(s)]
8/19/2009	10:51	LPR5-ARFT-Ind030	1	Tissue	Х	X	Х	Х	Х	
8/19/2009	12:44	LPR4-ARFT-Comp07	1	Tissue	Х	Х	Х	Х	Х	
8/19/2009	12:44	LPR4-ARFT-Ind034	1	Tissue	Х	Х	Х	Х	Х	
8/20/2009	11:59	LPR5-ARFT-Comp10	1	Tissue	Х	X	Х	Х	Х	
8/20/2009	12:25	LPR5-ARFT-Ind040	1	Tissue	X	Х	X	Х	Х	
8/20/2009	13:39	LPR4-ARFT-Comp08	1	Tissue	Х	Х	X	Х	Х	
8/20/2009	14:42	LPR4-ARFT-Ind044	1	Tissue	Х	Х	X	Х	Х	
8/21/2009	11:56	LPR5-ARFT-Ind049	1	Tissue	Х	X	Х	Х	Х	
8/21/2009	12:09	LPR5-ARFT-Ind048	1	Tissue	Х	Х	Х	Х	X	
		Total Number of Containers	10 of 32	Purchase Ord	ier / Sta	tement of W	/ork # CAS	09_01LPR		
1) Released by: Company: Date/Time Pec'd by: Company:	16 30	2) Released by: Company: Date/Time: Rec'd by: Company:		3) Released by: Company: Date/Time: Rec'd by: Company:			and time of Specimens Analytical, therefore,	orresponds to were grouped Alpha Analytic	the earliest co I together into al processed a leased by Alpl	y Windward Environmental. The collection date oblected individual specimen within the composite of composites by Windward onsite at Alpha and homogenized the individuals and composites ha Analytical. Sample names indicate whether the site (Comp).
Date/Time:		Date/Time:		Date/Time:						



To be comple	eted by Laboratory upon sample receipt:
Date of receipt:: 7/21/10	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: /6/6
Sooler temperature: $4, 6$	Received by: 54 (

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Columbia Analytical

K1007620

COC reference: # LPR-CAS-EELF-C

Project Number:	r: Task 16.1 (09.58.02.31)				Attn: Lynda Huck						
Contact Name:	Jennifer Parker Ship			Shipper:	pper: UPS				Airb	ill Number: <u>1219E18E 014148 1</u>	
Sampled By:	Wi	indward Er	nvironmental LLC	F	orm filled out by:	_Je	nnifer Par	ker/Diann	e Janak	Turr	naround requested: Standard
			The state of the s								
						Te	st(s) Reque	sted (check to	est(s) require		
Sample Collection Date (m/d/y)	Time	Sam	ple Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
8/25/2009	9:25	LPR6-ARF	T-Ind065	1	Tissue	Χ	Х	х	Х	Х	Comments / Instructions [Jar tag number(s)]
8/27/2009	11:08	LPR7-ARFT-Ind071		1	Tissue	Х	Х	Х	Х	Х	
8/29/2009	8:27	LPR6-ARFT-Ind073		1	Tissue	Х	Х	Х	Х	Х	
9/1/2009	12:55	LPR1-ARFT-Comp01		1	Tissue	Х	Х	Х	Х	Х	
9/2/2009	15:29	LPR1-ARFT-Comp02		1	Tissue	Х	Х	Х	Х	Х	
9/5/2009	15:15	LPR5-ARF	T-Ind086	1	Tissue	Х	Х	Х	Х	Х	
9/8/2009	12:32	LPR8-ARF	T-Comp17	1	Tissue	Х	X	X	Х	Х	
9/8/2009	13:15	LPR8-ARF	Γ-Comp21	1	Tissue	Х	Х	Х	X	Х	
9/8/2009	13:15	LPR8-ARF	Γ-Comp22	1	Tissue	Х	Х	Х	Х	Х	
9/9/2009	8:25	LPR8-ARF1	Γ-Comp14	1	Tissue	Х	Х	Х	Х	Х	
	T	otal Numb	er of Containers	10of 32	Purchase Order / Statement of Work # CAS09_01LPR						
1) Released by: Company: Date/Time: Company: Company: Date/Time:	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).					
								To be	complete	d by Lab	oratory upon sample receipt:



Date of receipt:: $7/21/10$	Laboratory W.O. #:
Condition upon receipt: Crood	Time of receipt: (0 / 6
Cooler temperature: 4, 6	Received by:

4	of	4

Columbia Analytical

COC reference: # LPR-CAS-EELF-D

Project/Client Name: Passaic RI/FS Tissue				To: Columbia A			Analytical COC reference: # LPR-CAS-EELF-D				
Project Number: Task 16.1 (09.58.02.31)				Attn: Lynda Huckestein				Ship	oping Date: 07/20/2010		
Contact Name:	Je	ennifer Park	er		- Shipper:		PS			Airb	oill Number: 12196186014148 10
Sampled By:		/indward En	vironmental LLC		Form filled out by	Jei	nnifer Par	ker/Diann	e Janak	Turr	naround requested: Standard
[1						Г
						Te		sted (check t			
Sample Collection Date (m/d/y)	Time	Samp	ole Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)	
9/2/2009	14:59	LPR2-ARF	Γ-Comp04	1	Tissue	Х	Х	Х	Х	Х	Comments / Instructions [Jar tag number(s)]
9/5/2009	12:03	LPR1-ARF	Γ-Ind085	1	Tissue	Х	Х	Х	Х	Х	
						MARKET TO THE STATE OF THE STAT					
											3
		Total Numb	er of Containers	2 of 32	Purchase Ord	er / Stater	ment of W	ork # CAS	09_01LPR		COMMUNICATION OF THE PROPERTY
1) Released by:	11		2) Released by:		3) Released by:						Windward Environmental. The collection date ollected individual specimen within the composite.
Company, Date/Time:		Company: Date/Time:			Company:			Specimens	were grouped	I together into	o composites by Windward onsite at Alpha and homogenized the individuals and composites;
					Date/Time:			therefore,	samples are re	leased by Alph	na Analytical. Sample names indicate whether the
Rec'd by:	163°		Rec'd by:		Rec'd by:			sample is a	an individual (I	nd) or compos	ite (Comp).
Company: Date/Time:			Company: Date/Time:		Company: Date/Time:						
								To be	complete	ed by Lah	oratory upon sample receipt:



Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

1	of	3
		•

K1067620

Project/Client Name: Passaic RI/FS Tissue			-	Co	lumbia A	Analytical		COC r	COC reference # LPR-CAS-EELWB-A		
Project Number: Task 16.1 (09.58.02.31)		Attn:		Lynda Huckestein				Shippi	Shipping Date: 07/20/2010		
Contact Name:	J	ennifer Parker		Shipper:		PS .			Airbill	Number: /	219E18E01414810
Sampled By:	V	Vindward Environmental LLC		orm filled out by	: Je	nnifer Par	rker/Diann	e Janak	Turnai	round reques	sted: Standard
(,		T	T	T						
					Te		sted (check t		1		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,60108)	Metals (ICP/MS, 6020)	Metals (Se, 7742)		omments / Instructions
9/2/2009	14:59	LPR2-ARCT-Comp04	1	Tissue	Х	Х	X	Х	Х	Co	[lar tag number(s)]
9/5/2009	12:03	LPR1-ARCT-Ind085	1	Tissue	Х	Х	Х	Х	Х		
8/11/2009	7:46	LPR3-ARWB-Ind001	1	Tissue	Х	Х	Х	Х	Х		
8/11/2009	11:30	LPR3-ARWB-Ind009	1	Tissue	Х	Х	Х	X	Х		
8/12/2009	11:36	LPR3-ARWB-Ind012	1	Tissue	Х	Х	Х	Х	Х		
8/18/2009	11:28	LPR4-ARWB-Ind024	1	Tissue	Х	Х	Х	Х	Х		
8/18/2009	12:39	LPR4-ARWB-Ind025	1	Tissue	Х	Х	X	Х	Х		
8/20/2009	12:30	LPR5-ARWB-Ind039	1	Tissue	Х	Х	X	Х	Х		
8/20/2009	14:42	LPR4-ARWB-Ind043	1	Tissue	Х	Х	Х	Х	Х		
8/21/2009	11:50	LPR5-ARWB-Comp11	1	Tissue	Х	Х	X	Х	Х		
		Total Number of Containers	10 of 21	Purchase Ord	der / State	ment of W	ork # CAS	09_01LPR			
1) Released by:		2) Released by:		3) Released by:			NOTES Individual and time c	specimens wer orresponds to	e collected by the earliest co	y Windward En	vironmental. The collection date ual specimen within the composite.
Company:		Company:		Company:			Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and compos therefore, samples are released by Alpha Analytical. Sample names indicate whether				
Date/Time:		Date/Time:		Date/Time:		therefore,				ample names indicate whether the	
Rec'd by:	14/	Rec'd by:		Rec'd by:			sample is a	ın individual (I	nd) or compo:	site (Comp).	
UPS	5										
Company: Date/Time:		Company: Date/Time:		Company: Date/Time:							
L							To be	complete	ed by Lab	oratory u	pon sample receipt:



Date of receipt:: $\frac{7}{2} / \frac{1}{6}$	Laboratory W.O. #:
Condition upon receipt: Good	Time of receipt: (8~6)
Cooler temperature: 4.5	Received by:

07/20/2010

COC reference

Shipping Date:

LPR-CAS-EELWB-A

1	of	3	
1	٠.	- 3	

Project/Client Name:

Passaic RI/FS Tissue

Task 16.1 (09.58.02.31)

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Attn:

Columbia Analytical

Lynda Huckestein

Project Number:	ras	sk 16.1 (09.58.02.31)	<i>_</i>	Attn:	<u>Ly</u>	nda Huck	estein		Snipp	Shipping Date: 07/20/2010		
Contact Name:	Jennifer Parker			Shipper:					Airbill	Number: 1219E18E01414815		
Sampled By:	Wir	ndward Environmental LLC	F	Form filled out by:		nnifer Par	ker/Diann	e Janak	Turna	Turnaround requested: Standard		
					Te	est(s) Reque	sted (check t	est(s) require	d)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
9/2/2009	14:59	LPR2-ARCT-Comp04	1	Tissue	X	Х	Х	Х	Х	Comments / Instructions [Jar tag number(s)]		
9/5/2009	12:03	LPR1-ARCT-Ind085	1	Tissue	Х	Х	Х	Х	Х			
8/11/2009	7:46	LPR3-ARWB-Ind001	1	Tissue	Х	Х	Х	Х	Х			
8/11/2009	11:30	LPR3-ARWB-Ind009	1	Tissue	Х	Х	X	Х	Х			
8/12/2009	11:36	LPR3-ARWB-Ind012	1	Tissue	Х	Х	X	Х	Х			
8/18/2009	11:28	LPR4-ARWB-Ind024	1	Tissue	Х	Х	Х	Х	Х			
8/18/2009	12:39	LPR4-ARWB-Ind025	1	Tissue	Х	Х	Х	Х	Х			
8/20/2009	12:30	LPR5-ARWB-Ind039	1	Tissue	Х	Х	Х	Х	Х			
8/20/2009	14:42	LPR4-ARWB-Ind043	1	Tissue	Х	Х	Х	Х	Х			
8/21/2009	11:50	LPR5-ARWB-Comp11	1	Tissue	Х	Х	X	X	Х			
	Т	otal Number of Containers	10 of 21	Purchase Order / Statement of Work # CAS09_01LPR								
Company: Company: Date/Time: Company: Rec'd by: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time:			3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).						
							T I			ooratory upon sample receipt:		



Date of receipt:: $\frac{7}{2} / \frac{1}{1} / \frac{6}{1}$	Laboratory W.O. #:
Condition upon receipt: (700 a)	Time of receipt: (0 (0
Cooler temperature: 4.5	Received by: 52

CHAIN-OF-CUSTODY/TEST REQUEST FORM of 3 COC reference: # LPR-CAS-EELWB-B Columbia Analytical Passaic RI/FS Tissue To: Project/Client Name: Shipping Date: 07/20/2010 Lynda Huckestein Task 16.1 (09.58.02.31) Attn: Project Number: Airbill Number: 1219018014149 1077 **UPS** Jennifer Parker Shipper: Contact Name: Standard Jennifer Parker/Dianne Janak Turnaround requested: Windward Environmental LLC Form filled out by: Sampled By: Test(s) Requested (check test(s) required) Metals (Se, 7742) Metals (ICP/MS, 6020) Butyltins (Krone) Lipids (Bligh-Dyer) Metals (ICP,6010B) Sample # of Collection Sample Identification Containers Matrix Date (m/d/y) Time Comments / Instructions Х Χ Х Х Х Tissue 8/22/2009 8:17 LPR4-ARWB-Ind060 [Jar tag number(s)] Χ Χ Χ 1 Χ Χ Tissue 8/22/2009 9:22 LPR5-ARWB-Ind062 Х Х Χ Х Х 1 Tissue 8/27/2009 8:08 LPR7-ARWB-Ind070 Х Х Χ Х Χ 1 Tissue 8/27/2009 8:47 LPR6-ARWB-Ind069 Х Х Χ Х Χ 1 Tissue 8/29/2009 10:49 LPR6-ARWB-Ind074 Χ Х Х Х Χ 1 Tissue 9/3/2009 12:37 LPR1-ARWB-Comp03 Χ Х Χ Χ Х 1 Tissue LPR8-ARWB-Comp16 9/7/2009 14:00 Χ Х Χ Χ Х 1 Tissue 9/8/2009 10:30 LPR8-ARWB-Comp15 Χ Х Х Χ Х 1 Tissue 9/8/2009 12:32 LPR8-ARWB-Comp18 Χ Χ Χ Tissue Х 9/9/2009 7:49 LPR8-ARWB-Comp13 Purchase Order / Statement of Work # CAS09_01LPR 10 of 21 **Total Number of Containers** 3) Released by: 2) Released by: 1) Released by: Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Company: Company: Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the Date/Time: sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Date of receipt:: 7/21/0	Laboratory W.O. #:
Condition upon receipt: Good	Time of receipt: 1010
Cooler temperature: 4.5	Received by: \$240

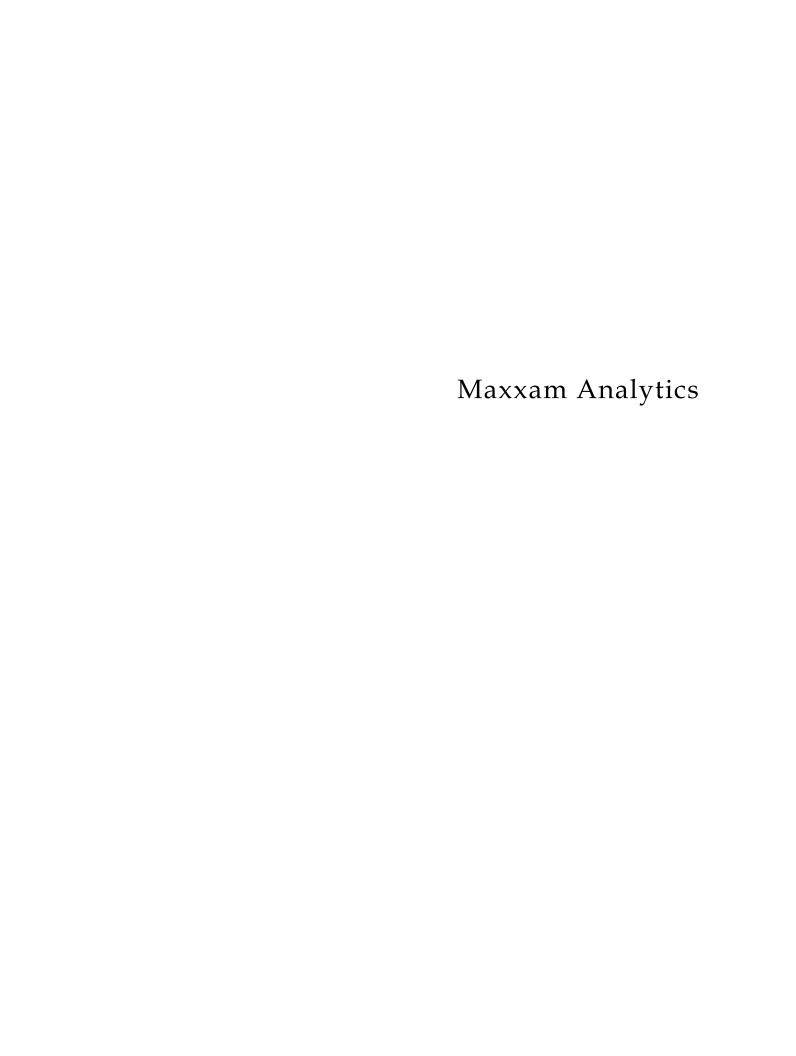
To be completed by Laboratory upon sample receipt:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					To: Columb			Analytical	COC r	COC reference: # LPR-CAS-EELV		B-C	
Project Number:		Task 16	5.1 (09.58.02.31)		Attn:	Ly	Lynda Huckestein				ng Date:	07/20/2010	
Contact Name:	-	Jennife	r Parker		Shipper:	UF	PS			 Airbill	Number:	12198188014	4148 1
Sampled By:	Sampled By: Wind		ard Environmental LLC		Form filled out by:	 Je	nnifer Par	ker/Diann	e Janak	—— Turnai	ound requ		
						Te	est(s) Reque	sted (check t	est(s) require	d)			
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)			
9/9/2009	11:25	LPR	8-ARWB-Comp19	1	Tissue	Х	Х	Х	Х	Х	(_omments / Instructions [Jar tag number(s)]	
												MANUFACTURE AND ASSESSMENT ASSESS	
		Total I	Number of Containers	1of 21	Purchase Ord	er / Stater	ment of W	ork # CAS	09_01LPR				
Date/Time: Company: Company: Company: Date/Time:	J. HD 1630		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time co Specimens Analytical. therefore, s sample is a	orresponds to were grouped Alpha Analytica amples are rel n individual (Ir	the earliest co together into al processed a eased by Alph ad) or compos	Ilected indiv composites and homogen a Analytical. ite (Comp).	nvironmental. The collection of idual specimen within the come by Windward onsite at Alpha nized the individuals and come Sample names indicate wheth	nposite. posites; her the
								To be	complete	d by Lab	oratory (upon sample receip	<u>t:</u>

Ward Ward environmental LLC

Date of receipt:: 7/21/10	Laboratory W.O. #:	
Condition upon receipt: Good	Time of receipt: 1010	,
Cooler temperature: 4,5	Received by:	



1 of	f <u>3</u>	CF	MIK	28-O E CHAI	ct-09 19:5 LLIS	8 ES	T REQ	JEST F	ORM		
Project/Client Na		assaic RI/FS Sediment						Analytics			LPR-M102809-1
Project Number:		0.58.02.41	ASR		ENV-16	3	Mike Cha	ıllis	Ship		0.28.09
Contact Name:	***************************************	nnifer Parker					Maxxam	courier			/A
Sampled By:	Th	nai Do, Angelita Rodriquez			Form fille	ed out by:	T•Do		Turn	around requested:	Standard
				T		Test(s) Requ	uested (check t	est(s) required)		· • • • • • • • • • • • • • • • • • • •
Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	OC Pesticides (1669 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)					nts / Instructions g number(s)]
10/21/09	1137	LPRT15D	2	Sed	x	x					
10/21/09	1457	LPRT14A	2	Sed	x	x					
10/21/09	1308	LPRT15A	2	Sed	×	×					~~~
10/21/09	1308	LPRT15A-FD	2	Sed	×	x		CIE		,.	
10/21/09	0939	LPRT15E	2	Sed	x	х		DIL :	Sample Insp	pection	
10/21/09	1421	LPRT17D	2	Sed	x	х		Resolve	d By:		********************************
10/22/09	0922	LPRT13A	2	Sed	x	x	,		-/-		
10/22/09	1203	LPRT12E	2	Sed	x	x		Date:			
10/22/09	1203	LPRT12E-FD .	2	Sed	x	х					
10/22/09	1606	LPRT13D	2	Sed	х	×					
	•	Total Number of Containers	20	Purchas	e Order / St	atement of	Work #	:			
1) Released by: Maya	Alla	2) Released by:		3) Release	ed by:		4) Releas	ed by:		5) Released by:	,
Company: Wind	1 1			Compar	ıy:		Compa	ny:		Company:	
Date/Time: //	128/00	Date/Time:		Date/Tir	ne:		Date/T	ime:		Date/Time:	
Rec'd by:	2	Rec'd by:		Rec'd b	y:		Rec'd	by:		Rec'd by:	
Company: Max Date/Time:		Company: Date/Time:		Compar Date/Tir	•		Compa Date/T	,		Company: Date/Time:	
	· · · · · · · · · · · · · · · · · · ·						То	be comple	ted by Labo	oratory upon s	sample receipt:

Wind Ward Elic

To be comple	eted by Laboratory upon sample receipt.
Date of receipt:: 04/10/28	Laboratory W.O. #:
Condition upon receipt: Ashirla	Time of receipt: 19158
Cooler temperature:	Received by: 2 · 7/3 · 4/4 · / °C

Project/Client Name:

Passaic RI/FS Sediment

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Ship to:

Maxxam Analytics

Project Number:	09.			Attn:		Mike Challis Sh			Shipping Date: 10.28.09			
Contact Name:	Jennifer Parker					Shipper:		Maxxam o	courier	Airbi	ll Number:	N/A
Sampled By:	Th	ai Do, Angelita Roc	Iriquez			Form filled out by:		T Do	T Do Turnar		around requested: Standard	
							T4(-) D					
	,			·				ested (check te	est(s) required)			
Sample Collection Date (m/d/y)	Time	Sample Identifi	cation	Volume of Sample / # of Containers	Matrix	OC Pesticides (1669 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)					ments / Instructions ar tag number(s)]
10/23/09	0903	LPRT12B		2	Sed	X	×					
10/23/09	1056	LPRT12C		2	Sed	х	x					
10/23/09	1416	LPRT12D		2	Sed	х	×					
10/24/09	0859	LPRT12A		2	Sed	x	х					
10/24/09	1045	LPRH12A		2	Sed	X	х					
10/26/09	1526	LPRT15B		2	Sed	х	x					
10/26/09	1205	LPRH16B		2	Sed	х	x			-		
10/26/09	1509	LPRT11G		2	Sed	х	×	-				
10/27/09	0954	LPRT16A		2	Sed	х	x					
10/27/09	1356	LPRT11A		2	Sed	х	x	<u> </u>				
	. 1	Total Number of Co	ntainers	20	Purchas	e Order / St	atement of	Work #				
1) Released by:	1 1	2) Released	l by:		3) Release	ed by:		4) Releas	ed by:		5) Release	d by:
Company: Wind Date/Time: /C Rec'd by: Company: Nax Date/Time:	lward Environ	7 Company Date/Tim	e: :		Compar Date/Tir <u>Rec'd b</u> Compar Date/Tir	ne: y: ny:		Compa Date/Ti Rec'd I Compa Date/Ti	me: py: ny:		Compan Date/Tim Rec'd by Compan Date/Tin	ne:



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

To be	completed	ı by	Laborator	y upon	sample	receipt:

LPR-M102809-2

Date of receipt:: 2 00 9/10/28	Laboratory W.O. #:
Condition upon receipt: Ask No.	Time of receipt: 99/10/28 / 9.'5
Cooler temperature: 2 07/3 4/4/26	Received by: Ashible

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Sediment				Ship to:		Maxxam Analytics			# LPR-M102809-3			
Project Number:	_09	.58.02.41				Attn:		Mike Challis	3	Shippi	ipping Date:	
Contact Name:	_Je	nnifer Par	ker			Shipper:		Maxxam courier Airb		Airbill	pill Number: N/A	
Sampled By:	Th	ai Do, An	gelita Rodriquez		-	Form fille	ed out by:	T Do		Turnaı	round reque:	sted: Standard
				·								
						_	Test(s) Reque	ested (check test	(s) required)			
Sample Collection Date (m/d/y)	Time	San	nple Identification	Volume of Sample / # of Containers	Matrix	OC Pesticides (1669 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)					ments / Instructions ar tag number(s)]
10/27/09	1800	LPRT11D	-RB	2	Water	х	х					
					-							
			· · · · · · · · · · · · · · · · · · ·									
		ļ										
			· .									· · · · · · · · · · · · · · · · · · ·
		ļ										
								<u> </u>				
	1	Total Num	ber of Containers	2	Purchas	e Order / St	atement of	Work #			·	
1) <u>Released by:</u> MaeA	fel	3	2) Released by:		3) <u>Release</u>	ed by:		4) Released	<u>by:</u>		5) Released	d by:
Company: Windv		nmental	Company:		Compar	ıy:		Company:			Company	r.
Date/Time: Date/Time:			Date/Tir	ne:		Date/Time			Date/Tim	e :		
Rec'd by:	1 =	5	Rec'd by:		Rec'd b	y:		Rec'd by:			Rec'd by	•
Company: Maxx Date/Time:	11-1	ies /	Company: Date/Time:		Compar Date/Tir			Company: Date/Time			Company Date/Tim	

Wind Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 To be completed by Laboratory upon sample receipt:

Pate of receipt:: 2009/10/28	Laboratory W.O. #:
condition upon receipt:	Time of receipt: 09/10/28 /9:58
cooler temperature: 2 7/34/4/1/5	Received by: Ashelle.

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Sediment	Ship to:	Maxxam Analytics		# LPR-MA110	509-1
Project Number:	09.58.02.41	Attn:	Mike Challis	Shipping Date:	11.05.09	
Contact Name:	Jennifer Parker	Shipper:	Maxxam courier	Airbill Number:	N/A	
Sampled By:	Thai Do, Angelita Rodriquez	Form filled out by:	T Do	Turnaround reque	sted: Standard	*

							Test(s) Reques	ted (check te	est(s) required)	
Sample Collection Date (m/d/y)	Time	N9E5 Sam	715	Volume of Sample / # of Containers	Matrix	OC Pesticides (1669 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				Comments / Instructions [Jar tag number(s)]
10/27/09	1559	LPRT110		2	Sed	х	х				
10/28/09	1133	LPRT16E		2	Sed	х	x				
10/28/09	1306	LPRT11C		2	Sed	х	х				
10/28/09	0926	LPRT11E		2	Sed	х	х	· · · · · · · · · · · · · · · · · · ·			
10/28/09	0926	LPRT11E-	FD	2	Sed	х	x				
10/28/09	1359	LPRT11B		2	Sed	х	X				
10/29/09	1203	LPRT10A		2	Sed	х	X			ļ	
10/29/09	1054	LPRT10B)	2	Sed x		X		ļ		
10/29/09	1406	LPRT10C		2	Sed	X	X		ļ		
10/29/09	0929	LPRT16D		2	Sed	X	X		<u> </u>	<u> </u>	
		Total Numl	ber of Containers	20	Purchas	e Order / St	atement of W	ork #			
1) Released by:	. 1		2) Released by:		3) Release	ed by:		4) Releas	ed by:		5) <u>Released by:</u>
MALCU Company: Wind Date/Time: 11.05	lward Envir		Company: Date/Time:		Compar Date/Tir	•		Compa Date/Ti			Company: Date/Time:
Rec'd by:				Rec'd by:			Rec'd l			Rec'd by:	
Company: Max Date/Time: / 6		tics	Company: Date/Time:		Compar Date/Tii	•		Compa Date/Ti	•		Company: Date/Time: 03NOV 9 124

Wind Ward ELLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 To be completed by Laboratory upon sample receipt:

Date of receipt:: 09111109	Laboratory W.O. #:			
[20] 등등 기자 시간 등등 이 경영 [20] 전 [20] 등 사람들은 사람들이 하는 것이 되었다.	Time of receipt: しない36			
Cooler temperature: 4 . 6 / 4 . 3 / 3 · 6 .	Received by: Apola Alle Pofe			

2 of	3		CH/	MIKE	CHALI		S	T REQU	JEST FOI	RM	# LPR-MA111209b-2
Project/Client Nan		58.02.41	S Sediment	-			Mike Chal		Shipping Date		
Project Number:								Maxxam o		Airbill Numbe	
Contact Name:		nnifer Parl		ABO				T Do	Journer	Turnaround re	
Sampled By:	<u> </u>	ai Do, Ang	gelita Rodriquez		· · · · · · · · · · · · · · · · · · ·	i onni mie	a out by.	1 00		Turnaround re	questeu. Otanidard
							Test(s) Requ	uested (check te	st(s) required)		
Sample Collection Date (m/d/y)	Time	Sam	ple Identification	Volume of Sample / # of Containers	Matrix	OC Pesticides (1669 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				Comments / Instructions [Jar tag number(s)]
11/09/09	1501	LPRT06C		2	Sed	. x	х				
11/09/09	1501	LPRT06C-	FD	2	Sed	х	х				
11/10/09	0952	LPRT02D		2	Sed	х	x				
11/10/09	1103	LPRT03C		2	Sed	х х	x			Interna	tional Solid ——
11/10/09	0929	LPRT09A		2	Sed	х	x			Sample -	
11/11/09	0800	LPRT04F		2	Sed	X	x				eat Required ——
11/11/09	1047	LPRT03F		2	Sed	Х	х		**************************************	High Risk ma	•
11/11/09	0834	LPRT04C		2	Sed	X	×		Co	ntrolled Storage a	nd Disposal
11/11/09	0925	LPRH05B		2	Sed	х	×				
11/11/09	1043	LPRT05A		2	Sed	X	X				
	•	Total Num	ber of Containers	20	Purchas	e Order / St	atement o	f Work #		· .	
1) Released by:	er LC		2) Released by:		3) <u>Releas</u>	ed by:		4) Release	ed by:	5) <u>Re</u>	leased by:
Company: Wind			Company:		Compai	ıy:		Compai	ıy:	Cor	npany:
Date/Time: 11.12	.09/2081	1	Date/Time:		Date/Ti	me:		Date/Ti	me:	Dat	e/Time:
Rec'd by:	Jones	9	Rec'd by:		Rec'd b	y:		Rec'd b	y:	Rec	<u>'d by:</u>
Company: Max Date/Time:			Company: Date/Time:		Compa Date/Ti	•		Compa Date/Ti	•	ı	npany: e/Time:



Date of receipt::	Laboratory W.O. #:	
0.8 [1.2] Condition upon receipt: 3.8 [4.2]	Time of receipt:	
Cooler temperature: 111.810.4	o (Pocaivad bys	'09 NOU 13

Passaic RI/FS Sediment

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Ship to:

Maxxam Analytics

_09.	58.02.41				Attn:		Mike Cha	llis	Ship	oping Date: 11.12.09	
Jei	nnifer Park	ker			Shipper:		Maxxam courier			Airbill Number: N/A	
Th	ai Do, Ang	gelita Rodriquez		· · · · · · · · · · · · · · · · · · ·	Form filled out by:				Turr	rnaround requested: Standard	
· 						Test(s) Requ	ested (check te	est(s) required)			
Time	Sam	nple Identification	Volume of Sample / # of Containers	Matrix	OC Pesticides (1669 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				Comments / Instructions [Jar tag number(s)]	
1430	LPRT05A-	-RB	2	Water	х	×					
1515	LPR-RW		2	Water	х	х					
		· ·									
			<u> </u>								
	-										
V-01-12-12-12-12-12-12-12-12-12-12-12-12-12											
•	Total Num	ber of Containers	4	Purchas	e Order / St	atement of	Work #				
20 CC)	2) Released by:		3) Release	ed by:		4) Releas	sed by:		5) Released by:	
ward Envir	onmental	Company:		Compar	ny:		Compa	ny:		Company:	
		Date/Time:		Date/Tir	me:		Date/T	ime:		Date/Time:	
mfa	nis	Rec'd by:		Rec'd b	y:		Rec'd	by:		Rec'd by:	
xam Analyi	ics 875	Company: Date/Time:								Company: Date/Time:	
	Time 1430 1515 ACC ward Environment of the control	Time Sam 1430 LPRT05A 1515 LPR-RW Total Num And Company of the sam Analytics	Time Sample Identification 1430 LPRT05A-RB 1515 LPR-RW Total Number of Containers 2) Released by: Company: Date/Time: Rec'd by: Ram Analytics Company: Company	Jennifer Parker Thai Do, Angelita Rodriquez Volume of Sample / # of Containers 1430 LPRT05A-RB 2 1515 LPR-RW 2 Total Number of Containers 4 2) Released by: Ward Environmental (1991) OR 11 Company: Date/Time: Rec'd by: Rec'd by: Company:	Time Sample Identification Volume of Sample / # of Containers Matrix 1430 LPRT05A-RB 2 Water 1515 LPR-RW 2 Water Total Number of Containers 4 Purchas 2) Released by: 2) Released by: Company: Date/Time: Rec'd by: Rec'd by: Company:	Time Sample Identification Volume of Sample / # of Containers Matrix 1430 LPRT05A-RB 2 Water x 1515 LPR-RW 2 Water x Total Number of Containers 4 Purchase Order / St 2) Released by: Company: Date/Time: Rec'd by: Rec'd by: Company: Company: Date/Time: Rec'd by: Company: Comp	Jennifer Parker Thai Do, Angelita Rodriquez Shipper: Form filled out by:	Jennifer Parker	Jennifer Parker Thai Do, Angelita Rodriquez Shipper: Form filled out by: T Do	Jennifer Parker Thai Do, Angelita Rodriquez Shipper: Form filled out by: Too Turing Test(s) Requested (check test(s) required) Volume of Sample # of Containers Matrix 1430 LPRT05A-RB 2 Water x x x LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x 1515 LPR-RW 2 Water x x x x 1515 LPR-RW 2 Water x x x x 1515 LPR-RW 2 Water x x x x 1515 LPR-RW 2 Water x x x x 1515 LPR-RW 2 Water x x x x 1515 LPR-RW 2 Water x x x x 1515 LPR-RW 2 Water x x x x x x x x x x x x x x x x x x x	

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Pate of receipt::		Laboratory W.O. #:		
ondition upon receipt: $0.$	8/1.2/1.700	C Time of receipt:	'09 NOV 13	12:48
ooler temperature: (1	8 0.400	Received by: 20t-14 2054014	09/11/13	12.48

12,48

#LPR-MA111209b-3

CHAIN-OF-CUSTODY/TEST REQUEST FORM of # LPR-MA111609-1 **Maxxam Analytics** Passaic RI/FS Sediment Ship to: Project/Client Name: Mike Challis 11.16.09 Shipping Date: 09.58.02.41 Attn: Project Number: Airbill Number: N/A Maxxam courier Jennifer Parker Shipper: Contact Name: Turnaround requested: Standard T Do Thai Do, Angelita Rodriquez Form filled out by: Sampled By: Test(s) Requested (check test(s) required) OC Pesticides (1669 Mod – NYSDEC HRMS-2) PAHs (CARB 429 Mod) Volume of Sample Comments / Instructions Sample / # of Collection Date [Jar tag number(s)] Matrix Containers Time Sample Identification (m/d/y)Sed 2 Х Х 11/11/09 1453 LPRH09B 2 Sed Х Х 11/12/09 1105 LPRT03G 2 Sed Х х 11/12/09 0909 LPRH13B 2 Sed Х Х 11/12/09 0928 LPRH05A SIF: Sample Inspection 2 Sed Х Х 11/12/09 1009 LPRH07B 2 Sed X Х 11/12/09 1046 LPRH10A Resolved 2 Sed Х X 11/12/09 1128 LPRH11A 2 Sed Х LPRH11B 11/12/09 1201 Date: 2 Sed X Х LPRH16A 11/12/09 1239 2 Sed Х LPRH12B 11/12/09 1433 Purchase Order / Statement of Work # 20 **Total Number of Containers** 5) Released by: 4) Released by: 3) Released by: 2) Released by: 1) Released by: Company: Company: Windward Environmental Company: Company: Company: Date/Time: Date/Time: Date/Time: Date/Time: 11.16.09/ 12:130 Date/Time: Rec'd by:

Rec'd by:

Company:

Date/Time:

Company: Maxxam-Analytics

Date/Time: 11.16.09/1230

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Rec'd by:

Company:

Date/Time:

	To be comp	leted by Labora	atory upon s	sample receipt:
e of receipt:: 209/	11/19	Laboratory W.O.	#:	

Company:

Date/Time:

17:54

Rec'd by:

Company:

Date/Time:

Date of receipt:: 209//1/19	Laboratory W.O. #:	
Condition upon receipt: Same broken	Time of receipt: 13:54	'09NOU1\$
Cooler temperature: 3/3/4°C	Received by: BAy	AxwA81

of	f _4_	СНА	IN-OF	-CUSTO	DY/1	TEST I	REQUEST FOR	RM
Project/Client Na	ame: Pa	assaic RI/FS Tissue		То:	M	axxam A	nalytics	COC ref erence # LPR-MA-EELF-A
Project Number:		ask 16.1 (09.58.02.31)		Attn: Mik		ike Challi	S	Shipping Date: 07/19/2010
Contact Name:	-	ennifer Parker		Shipper:	M	axxam co	ourier	Airbill Number: NA
Sampled By:		indward Environmental LLC		Form filled out by	r: Je	ennifer Pa	rker/Dianne Janak	Turnaround requested: Standard
						est(s) Reque	ested (check test(s) required)	= 21-Jul-10 11:40 - MIKE CHALLIS
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)		B096590 ABH FZ-13
8/11/2009	8:00	LPR3-ARFT-Comp20	1	Tissue	X	X		Comments / Instructions [lar tag number(s)]
8/11/2009	8:50	LPR3-ARFT-Comp06	1	Tissue	X	X		
8/11/2009	9:13	LPR3-ARFT-Ind005	1	Tissue	X	X		
8/11/2009	11:08	LPR3-ARFT-Comp05	1	Tissue	X	X		
8/12/2009	9:00	LPR3-ARFT-Ind010	1	Tissue	X	X		
8/12/2009	12:28	LPR3-ARFT-Ind014	1	Tissue	X	X		
8/18/2009	8:05	LPR5-ARFT-Comp09	1	Tissue	X	X	<u> </u>	International Sol
8/18/2009	8:15	LPR5-ARFT-Ind021	1	Tissue	X	X		- International Sol
8/18/2009	8:42	LPR4-ARFT-Ind022	1	Tissue	X	X		Sample Heat Treat Require
8/18/2009	12:30	LPR4-ARFT-Ind026	1	Tissue	X	X		
7		Total Number of Containers	10 of 32	Purchase Ore	der / State	ement of V	Work # MAX09_01LPR R	High Risk material Controlled Storage and Disposal
1) Released by:	4	2) Released by:		3) Released by:			NOTES Individual specimens were colle and time corresponds to the ea	ected by Windward Environmental. The collection date rrliest collected individual specimen within the composite.
Company (HA	Company:		Company:			1	her into composites by Windward onsite at Alpha cessed and homogenized the individuals and composites;
Date/Time:	1635	Date/Time:		Date/Time:			therefore, samples are released	by Alpha Analytical. Sample names indicate whether the
Recidible	1633	Rec'd by:		Rec'd by:			sample is an individual (Ind) or	composite (Comp).
Company: M	1/19/19	Company: Date/Time:		Company: Date/Time:				

Wind Ward environmental LLC

To be compl	eted by Laboratory upon sample receipt:
Date of receipt:: 2010/07/21	Laboratory W.O. #:
	Time of receipt: 1) 40
Cooler temperature: 6.4 7.8 8.1°C	Received by: ASAD BRADE

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	То:	Maxxam Analytics	COC reference:	# LPR-MA-EELF-B
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Mike Challis	Shipping Date:	07/19/2010
Contact Name:	Jennifer Parker	Shipper:	Maxxam courier	Airbill Number:	NA
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround reque	sted: Standard

,					est(s) Reque	sted (check test(s) required)	
Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			
10:43	LPR5-ARFT-Comp12	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]
10:51	LPR5-ARFT-Ind030	1	Tissue	Х	Х			
12:44	LPR4-ARFT-Comp07	1	Tissue	Х	X			
12:44	LPR4-ARFT-Ind034	1	Tissue	Χ	X			
11:59	LPR5-ARFT-Comp10	1	Tissue	Х	X			
12:25	LPR5-ARFT-Ind040	1	Tissue	X	X			
13:39	LPR4-ARFT-Comp08	1	Tissue	Х	X			
14:42	LPR4-ARFT-Ind044	1	Tissue	X	Х			
11:56	LPR5-ARFT-Ind049	1	Tissue	X	X			
12:09	LPR5-ARFT-Ind048	1	Tissue	X	X			
1	Total Number of Containers	10 of 32	Purchase Ord	der / State	ment of W	ork # MAX09_	01LPR	
1655	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by: Company:			and time corre Specimens wer Analytical. Alph therefore, sam	sponds to the earliest on the grouped together in the Analytical processed to be are released by Al	by Windward Environmental. The collection date collected individual specimen within the composite. to composites by Windward onsite at Alpha I and homogenized the individuals and composites; pha Analytical. Sample names indicate whether the osite (Comp).
	10:43 10:51 12:44 12:44 11:59 12:25 13:39 14:42 11:56 12:09	10:43 LPR5-ARFT-Comp12 10:51 LPR5-ARFT-Ind030 12:44 LPR4-ARFT-Comp07 12:44 LPR4-ARFT-Ind034 11:59 LPR5-ARFT-Comp10 12:25 LPR5-ARFT-Ind040 13:39 LPR4-ARFT-Comp08 14:42 LPR4-ARFT-Ind044 11:56 LPR5-ARFT-Ind049 12:09 LPR5-ARFT-Ind049 12:09 LPR5-ARFT-Ind048 Total Number of Containers 2) Released by: Company: Date/Time:	Time Sample Identification Containers 10:43 LPR5-ARFT-Comp12 1 10:51 LPR5-ARFT-Ind030 1 12:44 LPR4-ARFT-Comp07 1 12:44 LPR4-ARFT-Ind034 1 11:59 LPR5-ARFT-Comp10 1 12:25 LPR5-ARFT-Ind040 1 13:39 LPR4-ARFT-Comp08 1 14:42 LPR4-ARFT-Ind044 1 11:56 LPR5-ARFT-Ind049 1 12:09 LPR5-ARFT-Ind048 1 Total Number of Containers 10 of 32 2) Released by: Company: Date/Time: Date/Time:	Time Sample Identification Containers Matrix 10:43 LPR5-ARFT-Comp12 1 Tissue 10:51 LPR5-ARFT-Ind030 1 Tissue 12:44 LPR4-ARFT-Comp07 1 Tissue 12:44 LPR4-ARFT-Ind034 1 Tissue 11:59 LPR5-ARFT-Comp10 1 Tissue 12:25 LPR5-ARFT-Ind040 1 Tissue 13:39 LPR4-ARFT-Comp08 1 Tissue 14:42 LPR4-ARFT-Ind044 1 Tissue 11:56 LPR5-ARFT-Ind049 1 Tissue 12:09 LPR5-ARFT-Ind048 1 Tissue Total Number of Containers 10 of 32 Purchase Ord 2) Released by: 3) Released by: Company: Date/Time:	Time Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification X 10:51	Time Sample Identification # of Containers Matrix Sp j. bow 6 GS v. Y & Y & Y & Y & Y & Y & Y & Y & Y & Y	# of Containers	10:43

	/
Wi	Mard Ward environmental LLC

Cooler temperature: $6417.8/8.1^{\circ}$	Received by: Colon ASAD BHAZE
Condition upon receipt:	Time of receipt: //:'400
Date of receipt:: 2010 03 21	Laboratory W.O. #:
I The second second second second second second second second second second second second second second second	

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	To:	Maxxam Analytics	COC reference:	# LPR-MA-EELF-C
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Mike Challis	Shipping Date:	07/19/2010
Contact Name:	Jennifer Parker	Shipper:	Maxxam courier	Airbill Number:	NA
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround reque	sted: Standard

					Т	est(s) Reque	ested (check t	est(s) require	ed)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
8/25/2009	9:25	LPR6-ARFT-Ind065	1	Tissue	X	Х				Comments / Instructions [lar tag number(s)]
8/27/2009	11:08	LPR7-ARFT-Ind071	1	Tissue	Х	Х				tai iag humber(s)j
8/29/2009	8:27	LPR6-ARFT-Ind073	1	Tissue	Х	Х			-	
9/1/2009	12:55	LPR1-ARFT-Comp01	1	Tissue	Х	Х				
9/2/2009	15:29	LPR1-ARFT-Comp02	1	Tissue	X	X				
9/5/2009	15:15	LPR5-ARFT-Ind086	1	Tissue	Х	X				
9/8/2009	12:32	LPR8-ARFT-Comp17	1	Tissue	X	X				
9/8/2009	13:15	LPR8-ARFT-Comp21	1	Tissue	Х	X				
9/8/2009	13:15	LPR8-ARFT-Comp22	1	Tissue	Х	X				
9/9/2009	8:25	LPR8-ARFT-Comp14	1	Tissue	Х	Х				
	1	Total Number of Containers	10 of 32	Purchase Orc	ler / Stateı	nent of W	ork # MA	(09_01LPR		
1) Released by: Company: Daysy Time: Rec'd by:	1655	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			and time of Specimens Analytical. therefore, s	orresponds to were grouped Alpha Analytic	the earliest co I together into al processed a leased by Alpl	w Windward Environmental. The collection date oblected individual specimen within the composite. o composites by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).
Company: / Date/Time:	7/19/	Company: Date/Time:		Company: Date/Time:						

Wind Ward environmental LLC

To be com	pleted by Laboratory upon sample receipt:
Date of receipt:: 2 = 10 0 7 21	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 11 40
Cooler temperature: 6 . 4 /7 . 8 / 8. / °	Received by: Jon le ASAD BHATS

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				-	Го:	M	axxam A	nalytics		со	COC reference: # LPR-AP-MALF-D		
Project Number:			(09.58.02.31)		Attn:	M	ike Challi	s		Shi	pping Date:	07/19/2010	
Contact Name:	-	ennifer Pa			Shipper:	M	axxam co	ourier		Airl	bill Number:	NA	
Sampled By:			Environmental LLC		Form filled out by			rker/Diann	e Janak	 Tur	naround reque	ested: Standard	
Sampled by.		VIII GWAI G											
							est(s) Reque	ested (check t	test(s) require	d)			
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
9/2/2009	14:59	LPR2-A	ARFT-Comp04	1	Tissue	Х	X					nments / Instructions Jar tag number(s)]	
9/5/2009	12:03		ARFT-Ind085	1	Tissue	Х	Х						
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,													
	-												
	L	Total Nur	mber of Containers	2 of 32	Purchase Or	der / State	ement of V	Vork # MA	X09_01LPR				
2) Released by: Company: Date/Time: Reg'd by: Company: Company: Company: Date/Time: Company: Date/Time: Date/Time:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composi Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composite therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).				al specimen within the composite. Windward onsite at Alpha ed the individuals and composites;		
L	41-4							To be	e complete	ed by Lal	oratory ur	oon sample receipt:	
	1		200 Wost M	orcor Street				1		<i>y</i> =	- /		



Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

Cooler temperature: 6.4/3.8/8.1°C	Received by January ASAD Brook
	Time of receipt: 111,40
Date of receipt:: 2010/07/21	Laboratory W.O. #:

<u>1'</u> of <u>4</u>

IMMEDIATE TEST CHAIN-O

International Solid Sample Heat Treat Required

JEST FORM

Project/Client Na	-		RI/FS Tissue		Control	High Risk m	naterial and Disposa	1		COC ref erence # LPR-MA-CATC-
Project Number:			1 (09.58.02.31)		Attn:		Mike Chall	lis	S	Shipping Date: 07/07/2010
Contact Name:		lennifer F			Shipper:		Maxxam c	ourier	Α	Airbill Number:
Sampled By:	_1	Vindward	d Environmental LLC		Form filled out	by:	Jennifer P	arker/Dianne J	lanak т	urnaround requested: Standard
							Test(s) Requ	ested (check test(s) required)	
Sample Collection Date (m/d/y) Time		ne Sample Identification		# of Containers	Matrix	OC Pesticides (1699 Mod –	NYSDEC HRMS-2) PAHS (CARB 429 Mod)			Comments / Instructions [Jar tag number(s)] 9-Jul-10 09:05 MIKE CHALLIS B090038 DKN FZ-13
9/12/2009	9:35	LPR8-	WSCT-Ind009	1	Tissue	Х	х			9-Jul-10 09:
9/12/2009	11:16	LPR8-	WSCT-Ind013	1	Tissue	Х	Х			MIKE CHALLIS
9/15/2009	8:34	LPR5-	WSCT-Ind019	1	Tissue	Х	Х			1
9/18/2009	11:57	LPR5-	WSCT-Ind020	1	Tissue	Х	Х			
9/18/2009	14:10	LPR4-	WSCT-Ind023	1	Tissue	Х	Х			
8/18/2009	18/2009 8:15 LPR5-IPCT-Ind001 1			1	Tissue	Х	X			
8/25/2009	7:17	LPR6-I	PCT-Ind003	1	Tissue	X	Х			
8/26/2009	8:29	LPR6-I	PCT-Ind004 🕊	1	Tissue	Х	X			
8/26/2009	26/2009 10:18 LPR7-IPCT-Ind005 1			1	Tissue	Х	X			
8/27/2009	9:34	LPR7-I	PCT-Ind006 💥	1	Tissue	X	Х			
		Total Nu	umber of Containers	10 of 35	Purchase C	Order / Sta	tement of	Work # MAX09_	01LPR	
1) Released by: Company: Date/Time: Company: Date/Time:	173= 0-7 MAXX	9	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by Company: Date/Time: Rec'd by: Company: Date/Time:	Y.		and time corres Specimens were Analytical. Alpha therefore, samp	sponds to the earliest e grouped together ir a Analytical processe	by Windward Environmental. The collection dat collected individual specimen within the compo nto composites by Windward onsite at Alpha d and homogenized the individuals and compo- lpha Analytical. Sample names indicate whether posite (Comp).
/								To be co	mpleted by La	boratory upon sample receipt:
1 T 1 Suite 401			Date	of receipt::			Laboratory 1	W.O. #:		
WIII	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			Cond	lition upon r	eceipt:		Time of rece	eipt: 10/07/09 9:05	
			Fax: (206) 21	7-9343	Coole	er temperatu		34/266	Received by	Abille COKAHAL
Win	200 West Mercer Street Suite 401					lition upon r			Laboratory 1	w.o.#: eipt: 10/07/09 9,

•			
			·
2 01			
J	- 4		

Project/Client Name:

Project Number:

Contact Name:

Sampled By:

MIKE CHALLIS

Julpher.

Form filled out by:

B090038

DKN

Passaic RI/FS Tissue Task 16.1 (09.58.02.31)

Jennifer Parker

Windward Environmental LLC

FZ-13

Maxxam Analytics

COC reference:

#LPR-MA-CATC-C

Mike Challis

TEST REQUEST FORM

Shipping Date:

07/07/2010

Maxxam courier

Jennifer Parker/Dianne Janak

Airbill Number:

Turnaround requested: Standard

						est(s) Requ	ested (check t	est(s) required)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			Comments / Instructions [Jar tag number(s)]
8/19/2009	10:51	LPR5-ACCT-Ind006	. 1	Tissue	X	x			
8/25/2009	8:25	LPR6-ACCT-Ind008	1	Tissue	X	Х			
8/25/2009	8:25	LPR6-ACCT-Ind009	1	Tissue	X	Х			
8/26/2009	7:55	LPR6-ACCT-Ind010 🛱	1	Tissue	X	х			
8/27/2009	7:27	LPR6-ACCT-Ind013	1	Tissue	Х	Х			
8/27/2009	9:48	LPR7-ACCT-Ind014 🐇	1	Tissue	Х	Х			
8/29/2009	11:11	LPR6-ACCT-Ind016	1	Tissue	Х	Х			
8/29/2009	12:06	LPR7-ACCT-Ind017	1	Tissue	X	X			
9/2/2009	14:13	LPR2-ACCT-Ind018	1	Tissue	X	Х			
9/8/2009	8:04	LPR8-ACCT-Ind019	1	Tissue	Х	X			
	J	otal Number of Containers	10of 35	Purchase Or	der / State	ment of V	Nork # MAX	(09_01LPR	
Company: Company: Company: Date/Time:	1730 1730 14,KXAU	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Specimens Analytical therefore, s	orresponds to the earlie were grouped togethe Alpha Analytical proces	ed by Windward Environmental. The collection date est collected individual specimen within the composit rinto composites by Windward onsite at Alpha sed and homogenized the individuals and composite Alpha Analytical. Sample names indicate whether the mposite (Comp).

Date of receipt::

environmental

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Condition upon receipt: Cooler temperature:

Laboratory W.O. #: 9:05 Time of receipt: Received by: ASH SURBANDA

of'



International Solid Sample

Heat Treat Required

MIKE CHALLIS

۱	۱	Ш	Ш	I	ı		۱	ı
			9			_	102	

Project/Client Name:

Passaic RI/FS Tissue Task 16.1 (09.58.02.31)

High Risk material Controlled Storage and Disposal Attn:

Mike

FZ-13

9-Jul-10 09:05

#LPR-MA-CATF-A erence 07/07/2010

Project Number: Contact Name:

Jennifer Parker

Shipper:

Maxxam courier

Airbill Number:

.g Date:

Sampled By:

Windward Environmental LLC

Form filled out by:

Jennifer Parker/Dianne Janak

ASR

Turnaround requested: Standard

						Te	est(s) Requ	ested (check te	est(s) required)	프로 1 시간 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			Comments / Instructions [Jar tag number(s)]
9/12/2009	9:35	LPR8-W	SFT-Ind009	1	Tissue	X	X			
9/12/2009	11:16	LPR8-W	SFT-Ind013	1	Tissue	X	Х			
9/15/2009	8:34	LPR5-W	SFT-Ind019	1	Tissue	X	Х			
9/18/2009	11:57	LPR5-W	SFT-Ind020	1	Tissue	X	х			
9/18/2009	14:10	LPR4-W	SFT-Ind023	1	Tissue	X	х			
8/18/2009	8:15	LPR5-IPI	T-Ind001	1	Tissue	Х	Х			
8/25/2009	7:17	LPR6-IPI	T-Ind003 🔏	1	Tissue	Х	Х			
8/26/2009	8:29	LPR6-IPI	T-Ind004 ж	1	Tissue	X	Х			
8/26/2009	10:18	LPR7-IPI	T-Ind005 🛠	1	Tissue	X	х			
8/27/2009	9:34	LPR7-IPI	T-Ind006 ﴿	1	Tissue	X	Х			
		Total Nun	nber of Containers	10 of 35	Purchase Or	der / State	ment of \	Nork # MAX	09_01LPR	
1) Released by: Company: Oate/Jime/ Rec'd by:	1730		2) <u>Released by:</u> Company: Date/Time: <u>Rec'd by:</u>		3) Released by: Company: Date/Time: Rec'd by:			and time co Specimens Analytical. A therefore, s	orresponds to the earli were grouped togethe Alpha Analytical proces	ed by Windward Environmental. The collection date est collected individual specimen within the compositer into composites by Windward onsite at Alpha esed and homogenized the individuals and composites y Alpha Analytical. Sample names indicate whether the imposite (Comp).
Company: M Date/Time: 7	17/10		Company: Date/Time:		Company: Date/Time:					

200 West Mercer Street Suite 401 Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt:: Laboratory W.O. #: Condition upon receipt: Time of receipt: Received by: ASCI HUL Cooler temperature:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: _F	Passaic RI/FS Tissue		To:	М	axxam A	nalytics	COC reference	# LPR-MA-CATF-C
Project Number:	_1	ask 16.1 (09.58.02.31)		Attn:	M	ike Chall	is	Shipping Date:	07/07/2010
Contact Name:		ennifer Parker		Shipper:	М	axxam c	ourier	Airbill Number	
Sampled By:		Vindward Environmental LLC		Form filled out b	y: <u>J</u> e	ennifer Pa	arker/Dianne Janak	Turnaround red	quested: Standard
					Т	est(s) Regu	ested (check test(s) requir	red)	
Sample Collection Date (m/d/y)	Collection # Date (m/d/y) Time Sample Identification Conta		# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			Comments / Instructions [Jar tag number(s)]
8/19/2009	10:51	LPR5-ACFT-Ind006	1	Tissue	X	X			
8/25/2009	8:25	LPR6-ACFT-Ind008	1	Tissue	X	X			
8/25/2009	8:25	LPR6-ACFT-Ind009	1	Tissue	X	Х			
8/26/2009	7:55	LPR6-ACFT-Ind010 🛠	1	Tissue	Х	Х			
8/27/2009	7:27	LPR6-ACFT-Ind013	1	Tissue	Х	Х			
8/27/2009	/27/2009 9:48 LPR7-ACFT-Ind014 🛊 1			Tissue	Х	Х			
8/29/2009	8/29/2009 11:11 LPR6-ACFT-Ind016 1			Tissue	Х	Х			
8/29/2009	12:06	LPR7-ACFT-Ind017	1	Tissue	Х	х			
9/2/2009	14:13	LPR2-ACFT-Ind018	1	Tissue	Х	Х			
9/8/2009	8:04	LPR8-ACFT-Ind019	1	Tissue	X	Х			
		Total Number of Containers	10of 35	Purchase Ore	der / State	ment of V	Work # MAX09_01LPR		
Company Company Company Company Company Date/Time:	1730 14 KKAY	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were groupe Analytical. Alpha Analyti therefore, samples are re	o the earliest collected indivi ad together into composites ical processed and homoger	nvironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha ized the individuals and composites; Sample names indicate whether the
				To be complet	ed by Laboratory	pon sample receipt:			
	Date of	receipt::			aboratory W.O. #:	-pon sample receipt.			
Ward Suite 401 Seattle, WA 98119 Tel: (206) 378-1364				Conditi	on upon rec	eipt: / ' O	1 , ,	376 A 37 W. W. M. W. W. J. J. J. J. J. J. J. J. J. J. J. J. J.	ox109 9:05

Cooler temperature:

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: Pa	ISSAIC KI/FS TISSUE		10:	IVI	axxam A	патупсѕ	COC ret erence	# LPK-IVIA-PERVVD-A
Project Number:	Та	ask 16.1 (09.58.02.31)		Attn:	Mi	ke Challi	S	Shipping Date:	07/13/2010
Contact Name:	Je	nnifer Parker		Shipper:	Ma	axxam co	ourier	Airbill Number:	NA
Sampled By:	W	indward Environmental LLC	·	Form filled out by	r: Je	nnifer Pa	rker/Dianne Janak	Turnaround reque	ested: Standard
Sample					OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	ested (check test(s) requir		15-Jul-10 10:14 KE CHALLIS
Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pe (1699 NYSDE	PAHs (CARB		AB	
9/2/2009	15:46	LPR1-MACT-Ind145	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]
8/11/2009	7:21	LPR3-MAWB-Comp06	1	Tissue	Х	Х			
8/13/2009	11:52	LPR3-MAWB-Comp09	1	Tissue	X	Х			
8/13/2009	11:52	LPR3-MAWB-Comp10	1	Tissue	X	Х			
8/13/2009	11:52	LPR3-MAWB-Comp11	1	Tissue	X	Х			
8/13/2009	11:52	LPR3-MAWB-Comp12	1	Tissue	X	Х			
8/13/2009	11:52	LPR3-MAWB-Comp30	1	Tissue	X	X			International Solid
8/25/2009	11:09	LPR7-MAWB-Ind123	1	Tissue	Х	Х			Sample
8/26/2009	10:37	LPR7-MAWB-Comp25	1	Tissue	X	X			Heat Treat Required
8/27/2009	6:56	LPR6-MAWB-Ind128	1	Tissue	X	X			High Risk material
	1	Total Number of Containers	10 of 20	Purchase Ord	der / State	ment of V	Vork # MAX09_01LPR	Cor	ntrolled Storage and Disposal
Date/Time:	1625 1625 1625 1625 1625	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were groupe Analytical. Alpha Analyti therefore, samples are r	o the earliest collected in ed together into composi ical processed and homo	rd Environmental. The collection date advividual specimen within the composite. ites by Windward onsite at Alpha ogenized the individuals and composites; ical. Sample names indicate whether the p).
<u></u>	11						To be complet	ted by Laborator	ry upon sample receipt:
		200 West M Suite 401	ercer Street	Date of	receipt:: 🧷	0/0/0	•	Laboratory W.O. #:	

Condition upon receipt:

Cooler temperature:

3.1/1.8/2.90

Time of receipt: 10:14

ASAD BHAIDU

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

•			
2	of	2	

Project/Client Name:

Project Number:

Passaic RI/FS Tissue

Task 16.1 (09.58.02.31)

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Attn:

Maxxam Analytics

Mike Challis

13093245

LPR-MA-PERWB-B

07/13/2010

COC reference:

Shipping Date:

Time of receipt: 10 14

ASAD BHAIDL

Contact Name:	Je	nnifer Parker		Shipper: Maxxam courier				Airbill Number: NA		
Sampled By:	Wi	ndward Environmental LLC		orm filled out by	: <u>Je</u>	nnifer Par	ker/Dianne Janak	k Turnaround requested: Standard		
				Ī		est(s) Reque	sted (check test(s) requ	ired)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
9/1/2009	12:59	LPR1-MAWB-Ind138	. 1	Tissue	Х	X			Comments / Instructions [Jar tag number(s)]	
9/4/2009	11:25	LPR2-MAWB-Ind158	1	Tissue	X	X			· · · · · · · · · · · · · · · · · · ·	
9/7/2009	13:15	LPR8-MAWB-Comp32	1	Tissue	Х	Х				
9/12/2009	9:35	LPR8-MAWB-Comp28	1	Tissue	Х	Х				
9/12/2009	9:35	LPR8-MAWB-Comp29	1	Tissue	Х	X				
9/15/2009	9:23	LPR4-MAWB-Comp14	1	Tissue	Х	X				
9/17/2009	9:52	LPR5-MAWB-Comp19	1	Tissue	Х	X				
9/17/2009	10:04	LPR5-MAWB-Comp18	1	Tissue	Х	X				
9/18/2009	11:57	LPR5-MAWB-Comp23	1	Tissue	X	X				
9/18/2009	13:19	LPR4-MAWB-Comp15	1	Tissue	Х	X				
	1	Total Number of Containers	10 of 20	Purchase Order / Statement of Work # MAX09_01LPR						
1) Released by: Company: Date/Time: Date/Time:	\$625 \$AXE	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds Specimens were grou Analytical. Alpha Anal	to the earliest co ped together into rtical processed released by Alp	y Windward Environmental. The collection date ollected individual specimen within the composite. to composites by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).	
L	1//						To be comple	eted by Lab	oratory upon sample receipt:	
	1 /	200 West M	ercer Street	Date of	receipt:: 2	010/03	7/15	Laboratory W	.O. #;	

Condition upon receipt:

Cooler temperature: $3 \cdot 1 / 1 \cdot 8 / 2 \cdot 9$

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: Pa	assaic RI/FS Tissue	•	То:	M	axxam A	nalytics		COC ref erence # LPR-MA-PERF-A		
Project Number:	T	ask 16.1 (09.58.02.31)		Attn:	Mi	ke Challis	S		Shipping Date: 07/13/2010		
Contact Name:	Je	ennifer Parker		Shipper:	Ma	axxam co	urier		Airbill Number:	NA	
Sampled By:	V	/indward Environmental LLC		Form filled out by	Je	nnifer Pa	rker/Dianne	Janak	Turnaround req	uested: Standard	
					Te	est(s) Reque	ested (check tes	t(s) required)	Mik	15-Jul-10 10:14 XE CHALLIS	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			 B0 ABF	93261 H ENV-231	
8/11/2009	9:56	LPR3-MAFT-Comp02	1	Tissue	Х	Х			C	omments / Instructions [lar tag number(s)]	
8/11/2009	10:08	LPR3-MAFT-Comp03	1	Tissue	Χ	Х				. ,	
8/12/2009	9:24	LPR3-MAFT-Comp04	1	Tissue	Χ	X					
8/13/2009	10:00	LPR3-MAFT-Comp05	1	Tissue	Χ	Х					
8/13/2009	11:52	LPR3-MAFT-Comp07	1	Tissue	X	Х					
8/13/2009	11:52	LPR3-MAFT-Comp08	1	Tissue	X	Х					
8/14/2009	8:44	LPR3-MAFT-Comp13	1	Tissue	X	Х				International Soli	
8/25/2009	7:30_	LPR6-MAFT-Comp24	1	Tissue	X	Х					
8/25/2009	9:54	LPR6-MAFT-Ind122	1	Tissue	X	Х				Sample Heat Treat Required	
9/1/2009	13:10	LPR1-MAFT-Comp01	1	Tissue	X	X					
1		Total Number of Containers	10 of 35	Purchase Ord	er / State	ment of V	Vork # MAX0	9_01LPR	—— Contr	High Risk material olled Storage and Disposal	
1) Released by: Conformory Date Time Rec'd by:	1625 1625	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			and time cor Specimens w Analytical. Al therefore, sa	responds to the ere grouped tog pha Analytical pr mples are release	illected by Windward En earliest collected indivic jether into composites b rocessed and homogeni	ovironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha dized the individuals and composites; Sample names indicate whether the	
Company: // Date/Time:	1/13/0	Company: Date/Time:		Company: Date/Time:							
		200	C .					ompleted	by Laboratory u	pon sample receipt:	
	V	200 West M Suite 401	ercer Street	Date of	receipt:: 20	10/07	115	Labor	ratory W.O. #:		

Sui Sea CLC Tel:

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343 Date of receipt:: 2010/07115

Laboratory W.O. #:

Condition upon receipt:

Time of receipt: 10:14

Cooler temperature: 3.1/1.8/2.9'C

Received by ASAD BHATOL

2	of	2

Project/Client Name:

Passaic RI/FS Tissue

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Maxxam Analytics

B093261

COC reference:

Time of receipt: 10:14

LPR-MA-PERF-B

ASAD BHAID

Project Number:	Ta	Task 16.1 (09.58.02.31) Attn: Mike Challis							Shipping Date: 07/13/2010			
Contact Name:	Je	nnifer Parker		Shipper:	Ma	axxam co	ourier	Air	Airbill Number: NA			
Sampled By:	W	· · · · · · · · · · · · · · · · · · ·	Form filled out by	: Je	nnifer Pa	rker/Dianne Jai	nak Tur	Turnaround requested: Standard				
					Т	est(s) Reque	ested (check test(s)	required)				
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
9/10/2009	8:38	LPR8-MAFT-Comp26	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]			
9/10/2009	9:30	LPR8-MAFT-Comp31	1	Tissue	X	Х			[m mg mma.(.),			
9/12/2009	9:35	LPR8-MAFT-Comp27	1	Tissue	Х	Х						
9/18/2009	10:35	LPR5-MAFT-Comp20	1	Tiss∪e	Χ	Х						
9/18/2009	10:35	LPR5-MAFT-Comp21	1	Tissue	Х	Х						
9/18/2009	11:57	LPR5-MAFT-Comp22	1	Tissue	Х	Х						
9/18/2009	13:50	LPR4-MAFT-Comp16	1	Tissue	Х	Х						
9/18/2009	14:10	LPR4-MAFT-Comp17	1	Tissue	Х	X						
9/2/2009	15:46	LPR1-MAFT-Ind145	1	Tissue	Х	X						
				*								
		Total Number of Containers	9 of 19	Purchase Ord	ler / State	ment of V	Vork # MAX09_0	1LPR				
1) Released by: Company: Date/Time: Company: Date/Time:	1625 1625 1861	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds Specimens were of Analytical. Alpha therefore, sample	onds to the earliest o grouped together int Analytical processed	y Windward Environmental. The collection date ollected individual specimen within the composite. o composites by Windward onsite at Alpha and homogenized the individuals and composites; tha Analytical. Sample names indicate whether the site (Comp).			
7							To be con	pleted by Lak	poratory upon sample receipt:			
	4 /	200 West M	ercer Street	Date of	receipt::	10/0/03	7/15	Laboratory W	/.O.#:			

Condition upon receipt:

Cooler temperature: 3.1/1.8/2.9°C

IMMEDIATE TEST

1 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project Number: Q9.58.02.31	Project/Client Nar	ne: Pa	ssaic RI/	FS Tissue	To:		Maxxa	ım Analyt	tics				# LPR-MA-MH-1A
Sample Heat Treat Required High Risk material Controlled Storage and Disposal Controlled Storage a	Project Number:	09.58.02.31 Attn:					Mike Challis Shipping Date						03/24/2010
Sample Heat Treat Required High Risk material Controlled Storage and Disposal # of Containers # of Containers Matrix M	Contact Name: Jennifer Parker					oper:	Maxxa	m courier			Airb	oill Number:	
Sample Heat Treat Required High Risk material Controlled Storage and Disposal # of Containers # of Containers Matrix Y & Y & Y & Y & Y & Y & Y & Y & Y & Y	Sampled By: Windward Environmental LLC Form fill					m filled out by:	Jennife	er Parker	Diane Jan	ak	Tur	naround request	ed: Standard
Heat Treat Required High Risk material Controlled Storage and Disposal Comments / Instructions Far tag number(s)				Inter	rnational S	Solid <u> </u>						_	
8/26/2009 07:12 LPR6-CSMH-Comp37 1 Tissue X X 25-Mar-10 18:27 8/20/2009 13:03 LPR4-CSMH-Comp31 1 Tissue X X MIKE CHALLIS 8/27/2009 07:13 LPR6-CSMH-Comp41 1 Tissue X X B036065 8/25/2009 07:26 LPR6-CSMH-Comp42 1 Tissue X X B036065 8/27/2009 07:52 LPR6-CSMH-Comp44 1 Tissue X X ASR ENV-190 8/25/2009 09:24 LPR7-CSMH-Comp45 1 Tissue X X X Image: Associate to the company of the company of the company of the company of the company of the company of the company of the company of the collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual					Sample			est(s) Reques	ted (check t	est(s) requir	ed)	1	
8/26/2009 07:12 LPR6-CSMH-Comp37 1 Tissue X X 25-Mar-10 18:27 8/20/2009 13:03 LPR4-CSMH-Comp31 1 Tissue X X MIKE CHALLIS 8/27/2009 07:13 LPR6-CSMH-Comp41 1 Tissue X X B036065 8/25/2009 07:26 LPR6-CSMH-Comp42 1 Tissue X X B036065 8/27/2009 07:52 LPR6-CSMH-Comp44 1 Tissue X X ASR ENV-190 8/25/2009 09:24 LPR7-CSMH-Comp45 1 Tissue X X X Image: Associate to the company of the company of the company of the company of the company of the company of the company of the company of the collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual specimen were collected individual				Hear	_	ired	es (S-2)	(p)					
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8/26/2009 07:12 LPR6-CSMH-Comp37 1 Tissue X X 25-Mar-10 18:27	1	Time	Sar	mple Identification		Matrix	0 19 N	A S					
S/20/2009 13:03 LPR4-CSMH-Comp31 1 Tissue X X X MIKE CHALLIS	8/26/2009	07:12	LPR6-CSI	MH-Comp37	1	Tissue	Х	Х		1	i .	I	
8/20/2009 13:03 LPR4-CSMH-Comp31 1 Tissue X X	9/15/2009	09:58	LPR6-CSI	MH-Comp38	1	Tissue	Х	Х		M			
8/25/2009 07:26 LPR6-CSMH-Comp42 1 Tissue X X 8/27/2009 07:52 LPR6-CSMH-Comp44 1 Tissue X X 8/25/2009 09:24 LPR7-CSMH-Comp45 1 Tissue X X 8/25/2009 09:24 LPR7-CSMH-Comp46 1 Tissue X X 8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: Askitha Juliuma Company: Aloha Analytical Qate/Time: Date/Time: Wood 3/2 5 /8:27 Date/Time: Wood 3/2 5 /8:27 Date/Time: Wood 3/2 5 /8:27 Date/Time: Wood 3/2 7 1 /2:05 Date/Time: collected individual specimens were collected decollected individual specimens were collected collected individual specimen within collecte	8/20/2009	13:03	LPR4-CSI	MH-Comp31	1	Tissue	Х	Х					
8/25/2009 07:52 LPR6-CSMH-Comp44 1 Tissue X X 8/25/2009 09:24 LPR7-CSMH-Comp45 1 Tissue X X 8/25/2009 09:24 LPR7-CSMH-Comp46 1 Tissue X X 8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: 2) Released by: 1) Released by:	8/27/2009	07:13	LPR6-CSI	MH-Comp41	1	Tissue	Х	Х					
8/27/2009 07:52 LPR6-CSMH-Comp44 1 Tissue X X 8/25/2009 09:24 LPR7-CSMH-Comp45 1 Tissue X X 8/25/2009 09:24 LPR7-CSMH-Comp46 1 Tissue X X 8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp49 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: Ashitla Juhuwa Company: Alpha Analytical Date/Time: Work and Windward Environmental. The collect date and time corresponds to the excollected individual specimen within Date/Time: Work and Windward Environmental. The collect date and time corresponds to the excollected individual specimen within Date/Time: Work and Windward Environmental. The collect date and time corresponds to the excollected individual specimen within Date/Time: Work and Windward Environmental. The collect date and time corresponds to the excollected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Windward Environmental. The collected individual specimen within Date/Time: Work and Work	8/25/2009	07:26	LPR6-CSI	MH-Comp42	1	Tissue	Х	Х	,			ENIX 100	
8/25/2009 09:24 LPR7-CSMH-Comp46 1 Tissue X X 8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: Skittle Julium 3) Released by: 4) Released by: Individual specimens were collected Windward Environmental. The collected Windward Environmental. The collected Windward Environmental. The collected individual specimen within Date/Time: 10 of 3/25 (8:27) Date/Time: 10	8/27/2009	07:52	LPR6-CSI	MH-Comp44	1	Tissue	Х	Х		ASI	X	EN V-190	
8/25/2009 09:35 LPR7-CSMH-Comp49 1 Tissue X X 8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: A Released by: A	8/25/2009	09:24	LPR7-CSI	MH-Comp45	1	Tissue	X	Х					
8/26/2009 08:58 LPR7-CSMH-Comp53 1 Tissue X X Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: 2) Released by: Company: Alpha Analytical Date/Time: Date/Time: 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: 4) Released by: Company: Alpha Analytical Date/Time: Date/Time: 10 of 3/25 / 8:27 Date/Time: 10 of 3/25 / Date/Time: NOTES Individual specimens were collected Windward Environmental. The collected individual specimen withing the collecte	8/25/2009	09:24	LPR7-CSI	MH-Comp46	1	Tissue	X	Х					MARASA
Total Number of Containers 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 1) Released by: 2) Released by: Company: Alpha Analytical Date/Time: 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 4) Released by: Company: Alpha Analytical Date/Time: 10 of 21 Purchase Order / Statement of Work # MAX09_01LPR 4) Released by: NOTES Individual specimens were collected Windward Environmental. The collected individual specimen within collected individual specimen within	8/25/2009	09:35	LPR7-CSI	MH-Comp49	1	Tissue	Х	Х					AFINTRED 181
1) Released by: 1) Released by:	8/26/2009	08:58	LPR7-CSI	MH-Comp53	1	Tissue	X	Х			<u> </u>	<u> </u>	
2) Released by: A Released by: A Released		•	Total Num				er / Statem	ent of Wor	k # MAX09	_01LPR			
Company: Alpha Analytical Date/Time: Date/Time: Company: Company: Date/Time: Date/Time: Company: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time: Company: Date/Time: Date/Time: Date/Time: Company: Date/Time: Date/Ti	1) Released by:	4		2) Released by:	Ha Sulluna	3) Released by:	KN	221	4) Released	by:		1	
Company: Alpha Analytical Date/Time: Date/T	Marcel	7_		14.000	a AM	ĺ	AKWAS) / 1					
Date/Time: 10/03/25 18.21 Date/Time: 10/03/25 18.21 Date/Time: 10/03/25 18.21 Date/Time: 10/03/25 18.21 Date/Time: 10/03/25 12.05 Date/Time: 10/03/25 18.21 Date/Time: 10/03/25 1	Company: Alpha Analytical Company: Mas Criation			05 (21)2	Company: /	Maxxan	. Imayo				date and t	me corresponds to the earliest	
Rec'd by: Rec'd by: Rec'd by: Rec'd by: Rec'd by: together into composites by Windwonsite at Alpha Analytical. Alpha Analytical processed and homogeni the composites; therefore, samples released by Alpha Analytical.	Date/Time: 603/23 (3) Rec'd by: AKwith Boat		1 2	Date/Time: ℓ C	103/2	6 12:03	Date/Time:			1	• • • • • • • • • • • • • • • • • • • •		
Company: Date/Time: 3/24/10 Company: Malytical Processed and homogeni the composites; therefore, samples of the composites; the com			Coaling	Rec'd by:						together into composites by Windward			
Date/Time: 3/2//10 Company: C	G G	\cdot	(Maxx	our Braketis							Analytical	processed and homogenized
		124/10		Date/Time: (o/o 3/	26 11 AT	Date/Time:							
		· · · · · · · · · · · · · · · · · · ·			[1,00				L.				



To be compl	eted by Laboratory apoir sample receipt.
Date of receipt:: * State 10/03/25	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 18:27
Cooler temperature: -3 .0 / 2.9 / -3 .1 C	Received by: Affiche Sukeowan
	ASMI DAPA SURCEMAN

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Nan	ne: Pa	ssaic RI/	FS Tissue	Тс	:	Maxxa	m Analy	tics			# LPR-MA-MH-1B
Project Number:	_09	.58.02.31		At	tn:	Mike C	hallis			_ Shipping Date:	03/24/2010
Contact Name:	_Je	nnifer Par	ker	Sh	ipper:	Maxxa	m courier	•		Airbill Number:	
Sampled By:	Wi	ndward E	nvironmental LLC	Fo	rm filled out by:	Jennife	er Parker	/ Diane Jana	Turnaround reques	ted: Standard	
					<u> </u>	<u> </u>					
								sted (check test	t(s) required)		
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				ments / Instructions ar tag number(s)]
9/10/2009	13:02	LPR8-CSN	MH-Comp61	1	Tissue	Х	Χ				
8/25/2009	09:39	LPR7-CSN	MH-Comp48	1	Tissue	Х	Х				
9/9/2009	09:54	4 LPR8-CSMH-Comp54		1	Tissue	Х	Х				
8/25/2009	09:35	5 LPR7-CSMH-Comp50		1	Tissue	Х	Х				
9/9/2009	09:54	LPR8-CSMH-Comp55		1	Tissue	Х	Х				
9/8/2009	08:44	LPR8-CSMH-Comp56		1	Tissue	Х	Х				
9/9/2009	08:56	LPR8-CSN	MH-Comp57	1	Tissue	X	X				
9/1/2009	12:33	LPR1-CSN	MH-Comp01	1	Tissue	X	Х				14.5
9/2/2009	15:02	LPR1-CSN	MH-Comp02	1	Tissue	X	Х				10 MAR 25 18:
9/2/2009	15:46	LPR1-CSN	MH-Comp03	1	Tissue	X	Х				
	1	Total Num	ber of Containers	10 of 21	Purchase Orde	er / Statem	ent of Wor	rk # MAX09_0	1LPR		
1) Released by:	4		2) Released by: Askil	a selema	3) Released by:	Mr-	M	4) Released by:	<u>.</u>	NOTES	
Company: Date/Time:	Aralytical 1705	10	2) Released by: Ashib Company: Hascocare Date/Time: 10/03/2 Rec'd by: A kin Company: Mesker Date/Time: 10/03/	INI Nom and	<u>kec a by:</u>	Fewresi axxcum 103/26	Rentary Analytics 12:05	Company: Date/Time: Rec'd by: Company: Date/Time:		Windward date and ti collected ir composite. together in onsite at Al processed	pecimens were collected by Environmental. The collection me corresponds to the earliest dividual specimen within the Specimens were grouped to composites by Windward pha Analytical. Alpha Analytical and homogenized the ; therefore, samples are released nalytical.



To be compl	eted by Laboratory upon sample receipt:						
Date of receipt:: 10/03/25	Laboratory W.O. #:						
	Time of receipt: 18:27						
Cooler temperature: -3.0/-2.9/-3.12	Received by: Ashilla Sukuman Ashirm SUKUMAA						

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Pas	saic RI/F	S Tissue	To:		Maxxai	n Analyti	cs				# LPR-MA-MH-1C
09.5	58.02.31		Att	n:	Mike Cl	nallis		-	Ship	pping Date:	03/24/2010
Jen	nifer Parl	ker	 Shi	pper:	Maxxar	n courier	oill Number:				
Win	dward Er	nvironmental LLC	For	m filled out by:	Jennifer Parker / Diane Janak					naround request	ed: Standard
Ī					Te	est(s) Reque	sted (check te	est(s) required))		
Гіте	Sam	ple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				1	ents / Instructions tag number(s)]
5:46	LPR1-CSM	1H-Comp04	1	Tissue	х	Х					
					<u> </u>						
											10 MAR 25 18 2
1	otal Numl	ber of Containers	1 of 21	Purchase Ord	ler / Statem	ent of Wo	rk # MAX09	01LPR			
Ŋ		2) Released by: Askillo	Lechenna	3) Released by:	Max	n				NOTES Individual so	ecimens were collected by
rtical	-	Company: Kees Coco	u - 2	Company:	Magoni	EN 9-	Company:			Windward Er	vironmental. The collection
Date/Time/ 3/24/1/201705 Rec'd by:		Date/Time: 10/03/2	18:27	Date/Time.	10/03/2	n 6 12:05	Date/Time:			collected ind	ividual specimen within the
7	Rec'd by:			Rec'd by:	,0-,0-,0-		Rec'd by:			together into	pecimens were grouped composites by Windward ha Analytical. Alpha Analytical
410	Company: Maxxam Ima Date/Time: 10/03/26 11		m Malyha 26 11:00	Company: Date/Time:			Company: Date/Time:			composites;	therefore, samples are released
	09.8 Jen Win To	09.58.02.31 Jennifer Parl Windward Er Sam 5:46 LPR1-CSN Total Num Lical	O9.58.02.31 Jennifer Parker Windward Environmental LLC Sample Identification 5:46 LPR1-CSMH-Comp04 Total Number of Containers 2) Released by: Askillatical Company: Keening Date/Time: 10 (03/2) Rec'd by: Askillatical	O9.58.02.31 Attribute Ship Windward Environmental LLC For	Description Description	Attn: Shipper: Maxxar	Mike Challis Maxxam courier Mike Challis Maxxam courier Jennifer Parker	Attn: Shipper: Mike Challis Maxxam courier Jennifer Parker / Diane Jan: Jennifer Pa	Attn: Shipper: Maxxam courier Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker Jennifer Parker Diane Janak	Attn: Mike Challis Shipper: Maxxam courier Airt	Attn: Shipper: Maxxam courier Airbill Number: Maxxam courier Airbill Number: Turnaround requester



Date of receipt:: (6/03/25	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 18:27
Cooler temperature: -3.0/-2.9/-3.1%	Received by: Ashitha Sukuman

IMMEDIATE TEST

1 of 1	
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CHAIN-OF-CUSTODY/TEST REQUEST FORM

# LPR-MA-RB1	# LF		tics	cam Analyt	Maxxa	Project/Client Name: Passaic RI/FS Tissue To: Ma							
03/24/2010	Shipping Date: 03/2	Ship		Challis	Mike (n:	9.58.02.31 Attn:		09.58.02	Project Number:			
	Airbill Number:	Airb	•	am courier	Maxxa	pper:	 Shi _l	ifer Parker	Jennifer	Contact Name:			
ted: Standard	Turnaround requested:	Turr	Ellen Collins / Diane Janak				For	lward Environmental LLC	Windwa	Sampled By:			
) required)	sted (check test(s) re	Test(s) Reque	Т								
ments / Instructions r tag number(s)]				PAHs (CARB 429 Mod)	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	Matrix	# of Containers	Sample Identification	Time	Sample Collection Date (m/d/y)			
				X	X	Water	2	PR-032310-RB	LPR- 15:15	3/23/2010			
									-				
			<u> </u>	 				·					
				1									
		LPR	k # MAX09_01LPR	ment of Wor	ler / Statem	Purchase Orc	2	tal Number of Containers	Total I				
	NOTES		4) Released by:	927 8, 8.1	AKWAS	3) <u>Released by:</u>	the Sullian	2) Released by: ASULT	4	1) Released Vi:			
esta in the same of the			Company:	n	Naxxa n	Company: /	Λ - D	Company: Masslaw	nalytical				
			Date/Time:	12519:18	10/03/	Date/Time:	3 18;24	Date/Time: (0(03/2	Recid by:				
Managara			Rec'd by:			Rec'd by:	and a	Rec'd by:					
110 MAR 25 18 - 21			Company: Date/Time:			Company: Date/Time:	43/11. am 03/25 19:1	Company: Movices Date/Time: 2016/					
	y Laboratory upo	mpleted by Lab	Company: Date/Time: Rec'd by: Company: Date/Time:		AKWAS Naxxa n	Company: / Date/Time: 6	5 18;22 19mg ASI C.	Company: Alpha Analytical Date/Time: 10/03/25 /8; Rec'd by: Company: Maxiam Date/Time: 10/03/25 /8; Rec'd by: Company: Maxiam Date/Time: 10/03/25 /8; Rec'd by: AKW ASI G. Company: Maxiam Date/Time: 10/03/25 /8;					

Wind Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt:: 10/0 3/2 5	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: /8;22
Cooler temperature: $1 - 9/2 \cdot 0/2 = 0$	Received by: Aspithe Sukeeva

Asie Het

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Pas	ssaic RI/I	FS Tissue	Т	t/Client Name: Passaic RI/FS Tissue To: Maxxam Analytics						١	
09.	58.02.31		A	Attn: Shipper:		Challis		Ship	ping Date: 4/13/2010		
Jen	nifer Par	ker	Sł			am couri	er	Airbi	Airbill Number: NA		
Wir	Windward Environmental LLC			orm filled out by:	Jenni	fer Parke	er/Dianne Janak	Turn	around requested: Standard		
·						est(s) Reque	ested (check test(s) re	quired)			
Time Sample Identification Containers Matrix Sample Identification Containers Care Matrix				Comments / Instructions [Jar tag number(s)]							
10	LPR1-CSF	HT-Comp05	1	Tissue	X	Х		, ,	4-Apr-10 10:06		
03	LPR2-CSF	IT-Comp63	1	Tissue	Х	Х			*		
10	LPR1-CSF	IT-Comp09	1	Tissue	X	Х					
07:21 LPR3-CSHT-Comp64		07:21 LPR3-CSHT-Comp64 1	21 LPR3-CSHT-Comp64		Tissue	X	Х				
13	LPR2-CSF	IT-Comp21	1	Tissue	X	Х					
24	LPRX-CSF	HT-Comp65	1	Tissue	X	Х		2 11 11			
48	LPR8-CSF	IT-Comp66	1	Tissue	Х	Х			International Solid		
									\		
									· · · · · · · · · · · · · · · · · · ·		
T	otal Num	ber of Containers	7	Purchase Orde	er / Statem	ent of Wo	ork # MAX09_01LPR	Con			
		2) Released by:		3) Released by:			4) Released by:		NOTES Individual specimens were collected	d by	
	040	Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:		Windward Environmental. The colled date and time corresponds to the collected individual specimen within composite. Specimens were group together into composites by Windwonsite at Alpha Analytical Analytical processed and homoger the composites; therefore, samples released by Alpha Analytical.	earliest in the ed ward nized	
(09 Jen Wir 10 03 10 21 13 24 48	09.58.02.31 Jennifer Par Windward E	O9.58.02.31 Jennifer Parker Windward Environmental LLC Medical Environmental LLC Description of Containers O9.58.02.31 Jennifer Parker Windward Environmental LLC Sample Identification 10 LPR1-CSHT-Comp05 O3 LPR2-CSHT-Comp63 10 LPR3-CSHT-Comp64 13 LPR2-CSHT-Comp64 14 LPRX-CSHT-Comp65 48 LPR8-CSHT-Comp66 Total Number of Containers Ompany: Ompany: Date/Time: Rec'd by: Company:	O9.58.02.31	Description Description	Dennifer Parker Shipper: Maxx Shipper: Form filled out by: Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker Jennifer Jennif	Mike Challis Maxxam courie Mike Challis Maxxam courie	Mike Challis Maxxam courier Jennifer Parker Windward Environmental LLC Form filled out by: Maxxam courier Jennifer Parker/Dianne Janak Maxxam courier Jennifer Parker/Dianne Janak Test(s) Requested (check test(s) response of the country o	Denifer Parker Shipper: Maxxam courier Airbi Mike Challis Shipper: Mike Challis Maxxam courier Airbi Mike Challis Maxxam courier Airbi Maxxam courier Airbi Maxxam courier Airbi Maxxam courier Jennifer Parker/Dianne Janak Turn	Attn: Jennifer Parker	



To	be completed by Laboratory upon sample receipt:							
Date of receipt::	Laboratory W.O. #:							
Condition upon receipt:	Time of receipt: lolo4114	10:01						
Cooler temperature:	Received by: 20F/A 75/101/A							

Project/Client Na	ne:	Passaic R	RI/FS Tissue	Тс	:	Maxxa	m Analy	rtics				# LP	R-MA-RB2
Project Number:		09.58.02.3	31	At	tn:	Mike C	Challis			Ship	ping Date:	04/1	4/2010
Contact Name:		Jennifer P	arker	Sh	ipper:	Maxxa	m courie	r		Airbi	ill Number:	NA	
Sampled By:	_	Windward	Environmental LLC	Fc	rm filled out by:	Ellen Collins/Diane Janak Turnar				around reques	ted: S	Standard	
						To	est(s) Reque	ested (check te	st(s) required)				
Sample Collection Date (m/d/y)	Time	e S	ample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
4/12/2010	10:40	LPR-04	11210-RB	2	Water	Х	Х						Instructions umber(s)]
									- 1	MIKE C 	14-Apr-10 CHALLIS 	⁷ -786	
		Total Nu	mber of Containers	2	Purchase Ord	er / Statem	ent of Wo	rk # MAX09_	01LPR			-	
1) Released by: Company Date/Time: Company: Date/Time:		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			4) Released be Company: Date/Time: Rec'd by: Company: Date/Time:	y:		NOTES		2-9/3/32 10APRIA 10



To be comple	eted by Laboratory upon sample receipt:
Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					То:		Maxxar	n Analytics		# LPR-MA-MH-2A
Project Number:	ect Number: 09.58.02.31		Attn:		Mike Ch	nallis	Shipping Date:	4/13/2010		
Contact Name:	Je	Jennifer Parker Shipper: Maxxam courier			n courier	_ Airbill Number:	NA			
Sampled By:	W	/indward Environmental LLC			Form filled out	by:	Jennifer F	Parker/Dianne Janak	Turnaround reque	sted: Standard
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	quested (ch	eck test(s) required)	Com 4-Apr-10 10:06	nments / Instructions ng number(s)]
9/8/2009	09:50	LPR8-CSMH-Comp58	1	Tissue	Х	X		MIKE CI		WW Note: Co
9/1/2009	14:04	LPR1-CSMH-Comp06	1	Tissue	X	X				collection dat
9/2/2009	16:33	6:33 LPR1-CSMH-Comp07 1		Tissue	Х	Х				for LPR4-CS
0/2/2002		LDD4 CCAALL C 44	1	Ticauc	V	V		B04425	1	0 00 :-

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Χ

9/1/2009 12:09 LPR2-CSMH-Comp14 Sample Х Χ 1 Tissue 9/1/2009 11:03 LPR2-CSMH-Comp17 **Heat Treat Required** Χ Χ 1 Tissue 9/1/2009 10:02 LPR2-CSMH-Comp15 High Risk material 1 Tissue 9/3/2009 12:35 LPR2-CSMH-Comp18 Purchase Order / Statement of Work # MAX09_oller Controlled Storage and Disposal 10 of 20 **Total Number of Containers NOTES**

12:49

13:03

12:49

9/2/2009

8/20/2009

9/1/2009

2) Released by:

LPR1-CSMH-Comp11

LPR4-CSMH-Comp30

LPR1-CSMH-Comp13

Company: Date/Time:

Rec'd by:

Company: Date/Time: 3) Released by:

Tissue

Tissue

Tissue

Tissue

1

1

1

1

Company: Date/Time:

Rec'd by:

Company: Date/Time: 4) Released by:

AKP

Company: Date/Time:

Rec'd by:

Company: Date/Time:

FZ-13 8/18/2009 at 11:41. **International Solid**

Comp30 is

Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.

To be completed by Laboratory upon sample receipt:

200 West Mercer Street Suite 401	Date of receipt::	Laboratory W.O. #:
Seattle, WA 98119 Tel: (206) 378-1364	Condition upon receipt:	Time of receipt: 04 (4 00,06
Fax: (206) 217-9343	Cooler temperature:	Received by: 20514 LENGY 10 AFR

_	→		
	2	 of	2

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Maxxam Analytics

Project/Client Na	me: _	Passaic R	I/FS Tissue			То:		Maxxam /	Analytics		# LPR-MA-MH-2B	
Project Number:	_(09.58.02.3	1			Attn:		Mike Chal	lis	Shipping Date: 4/13/2010		
Contact Name:		Jennifer Parker					Shipper:		ourier	Airbill Number: NA		
Sampled By:	_	Windward		Form filled ou	t by:	Jennifer Park	cer/Dianne Janak	— Turnaround req	uested: Standard			
				 								
				·			est(s) Rec	quested (check	test(s) required)			
Sample Collection Date (m/d/y) Time		Si	ample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2) PAHs (CARB 429 Mod)				c	omments / Instructions [Jar tag number(s)]	
9/1/2009	11:32	LPR2-C	SMH-Comp19	1	Tissue	Х	Х			·		
9/1/2009	11:32	LPR2-C	SMH-Comp20	1	Tissue	X	Х					
8/11/2009	10:08	8 LPR3-CSMH-Comp24		1	Tissue	X	Х					
8/18/2009	07:43	3 LPR5-CSMH-Comp34		1	Tissue	X	Х					
8/12/2009	10:29	LPR3-C	SMH-Comp26	1	Tissue	X	Х					
8/18/2009	10:35	LPR4-C	SMH-Comp32	1	Tissue	X	Х					
8/18/2009	12:01	LPR4-C	SMH-Comp33	1	Tissue	X	Х					
8/11/2009	07:21	LPR3-C	SMH-Comp27	1	Tissue	X	Х					
8/13/2009	11:52	LPR3-C	SMH-Comp28	1	Tissue	X	X					
8/21/2009	13:46	LPR5-C	SMH-Comp35	1	Tissue	X	Х				4.	
	2	Total Nu	mber of Containers	10 of 20	Purchase O	der / Statem	ent of V	Vork # MAX0	9_01LPR			
1) Released by:	/	1	2) Released by:		3) Released by	<u>.</u>		4) Release	d by:	NOTES		
Company: Date filme Ree'd by: Company: Date/Time:	1042		Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:		Windwa date and collected compositogethe onsite a processic compositom with the composition of the compositi	al specimens were collected by rd Environmental. The collection of time corresponds to the earliest of individual specimen within the lite. Specimens were grouped into composites by Windward of Alpha Analytical. Alpha Analytical and homogenized the lites; therefore, samples are released a Analytical.	



Pate of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 10(04(14 10)06
ooler temperature:	Received by 7 or 34 a 7

Project/Client Name:

Project Number:

Passaic RI/FS Tissue

09.58.02.31

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Attn:

Maxxam Analytics

Mike Challis

Contact Name:	_Je	nnifer Par	ker	Sł	nipper:	Maxx	rier Airbill Number: NA	
Sampled By:	Wi	ndward E	nvironmental LLC	Fc	orm filled out by:	Jenni	fer Parke	ker/Dianne Janak Turnaround requested: Standard
							st(s) Reque	uested (check test(s) required)
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	14-Apr-10 10:12 ments / Instructions MIKE CHALLIS r tag number(s)]
8/28/2009	8:50	LPR7-CSN	MT-Comp52	1	Tissue	Χ	Х	
9/1/2009	14:04	LPR1-CSN	MT-Comp08	1	Tissue	X	Х	B044269
9/2/2009	12:08	LPR1-CSN	MT-Comp10	1	Tissue	Х	Χ	AKP FZ-13
9/3/2009	12:00	LPR1-CSN	MT-Comp12	1	Tissue	Х	Х	1210
9/2/2009	12:26	LPR2-CSN	MT-Comp16	1	Tissue	Х	Х	
9/17/2009	11:27	LPR6-CSN	MT-Comp39	1	Tissue	Χ	Х	International Solid ———
9/1/2009	11:46	LPR2-CSN	MT-Comp22	1	Tissue	Х	Χ	Sample —
9/1/2009	11:07	LPR2-CSN	MT-Comp23	1	Tissue	Х	Χ	Heat Treat Required ————
8/27/2009	06:50	LPR6-CSN	MT-Comp40	1	Tissue	Х	Χ	High Risk material
8/12/2009	09:24	LPR3-CSN	MT-Comp25	1	Tissue	Х	Х	Controlled Storage and Disposal
	7 T	otal Num	ber of Containers	10 of 21	Purchase Orde	er / Statem	ent of Wor	/ork # MAX09_01LPR
1) Released by:	al .		2) Released by:		3) Released by:			4) Released by: NOTES
Company: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.
								To be completed by Laboratory upon sample receipt:



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt::	Laboratory W.O. #: 10 APR 14	10:12
Condition upon receipt:	Time of receipt: (0/04/14 10:12	-3.400
Cooler temperature:	Received by: 20174 2trett4	

LPR-MA-MT-A

4/13/2010

Shipping Date:

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of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: _I	ne: Passaic Ri/F3 Tissue 10:				maxxam Analytics						# LPR-MA-MT-B			
Project Number: 09.58.02.31			A	ttn:	Mik	e Challis			Shipping Date: 4/13/2010						
Contact Name:	ame: Jennifer Parker Shipper:			Max	Maxxam courier				Airbill Number: NA						
Sampled By:		Windward E	nvironmental LLC	Fo	orm filled out by:	Jen	nifer Parl	ker/Dianne J	anak	— Turnaro	und requeste	d: Standard			
					T										
							est(s) Reque	ested (check tes	t(s) required)						
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)					ents / Instructions tag number(s)]			
8/27/2009	07:17	LPR6-CSI	MT-Comp43	1	Tissue	X	Х								
8/15/2009	7:00	LPR3-CSI	MT-Comp29	1 .	Tissue	Χ	Х								
8/20/2009	12:20	LPR5-CSI	MT-Comp36	1	Tissue	X	Х					-			
8/26/2009	11:38	LPR7-CSI	MT-Comp47	1	Tissue	Х	X								
8/27/2009	08:55	LPR7-CSI	MT-Comp51	1	Tissue	X	Х								
9/9/2009	08:56	LPR8-CSI	MT-Comp59	1	Tissue	X	Х								
9/9/2009	08:47		MT-Comp60	1	Tissue	X	Х								
9/10/2009	13:02	LPR8-CSI	MT-Comp62	1	Tissue	X	Х					And the second s			
9/1/2009	13:10	LPR1-CSI	MT-Comp05	1	Tissue	X	Х								
9/3/2009	11:10	LPR1-CSI	MT-Comp09	1	Tissue	X	Х	1							
	7	Total Num	ber of Containers	10 of 21	Purchase Orde	er / Statem	ent of Wo	rk # MAX09_0	1LPR	·					
1) Released by:	, L		2) Released by:		3) Released by:			4) Released by	:		NOTES				
Company: Date/Time: Company: Date/Time:	1055	10	Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company: Date/Time: Rec'd by: Company: Date/Time:		· 1	Windward Environment of the collected individual composite. Sp together into onsite at Alph processed and	cimens were collected by vironmental. The collection corresponds to the earlies vidual specimen within the lecimens were grouped composites by Windward a Analytical. Alpha Analytical d homogenized the nerefore, samples are relea ytical.	cal		
	ν														



10 be com	ipieted by Laboratory upon sample receipt:	
Date of receipt:: Condition upon receipt:	Laboratory W.O. #: 10 APK 14 10:12 -2:1/-3.2/-3.4 ° (
Condition upon receipt:	Time of receipt: 10/04/14 (0)12	
Cooler temperature:	Received by: 2017/4 7.F.K.T.K.	

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Maxxam Analytics

Project Number: 09.58.02.31			ttn:	Mike Challis					Shipping Date: 4/13/2010			
Contact Name: Jennifer Parker			Shipper:		xam cou	urier		Airb	Airbill Number: NA			
Windward I	Environmental LLC	Fo	Form filled out by:		nifer Par	ker/Dianne	e Janak	Turi	naround requested: Standard			
me Sa	ample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	ested (check	test(s) required)	Comments / Instructions [Jar tag number(s)]			
· · · · · · · · · · · · · · · · · · ·		1	Tissue	Х	Х				1			
						1						
					-							
						1		.,				
						1						
Total Nun	mber of Containers	1 of 21	Purchase Orde	er / Statem	ent of Wo	ork # MAX0	9 01LPR					
	2) Released by:					1		-	NOTES			
13/10	Company: Date/Time: Rec'd by: Company: Date/Time:		Company: Date/Time: Rec'd by: Company: Date/Time:			Company. Date/Time Rec'd by: Company.	e:		Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the composites; therefore, samples are released by Alpha Analytical.			
	Jennifer Pa Windward Sa H:13 LPR2-CS Total Nur	Jennifer Parker Windward Environmental LLC Sample Identification I:13 LPR2-CSMT-Comp21 Total Number of Containers 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by:	Jennifer Parker Windward Environmental LLC # of Containers #:13 LPR2-CSMT-Comp21 1 Total Number of Containers 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by:	Jennifer Parker Windward Environmental LLC # of Containers LPR2-CSMT-Comp21 Total Number of Containers 2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Company: Date/Time: Rec'd by: Re	Jennifer Parker Windward Environmental LLC Form filled out by: Jen	Jennifer Parker Windward Environmental LLC # of Containers Matrix Test(s) Requested by: Form filled out by: Maxxam color	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker/Dianner	Jennifer Parker Windward Environmental LLC Form filled out by: Jennifer Parker/Dianne Janak	Jennifer Parker Windward Environmental LLC Form filled out by:			



200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

101	be completed by Edboratory upon	sample receipt.
Date of receipt::	Laboratory W.O. #:	110AFR14 1
ondition upon receipt:	Time of receipt: (0(0)(1)	6)[2 -21,1/-3.2
ooler temperature:	Received by: ZOF 4-25	cerca

LPR-MA-MT-C

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	me: P 2	assaic RI/FS Tissue		То:	Maxxa	am Analy	tics		# LPR-MA-CT-A			
Project Number:	09	9.58.02.31		Attn:	Mike C	Challis		Shipping	Date: 4/13/2010			
Contact Name:	Je	ennifer Parker		Shipper:	Maxxa	ım courie	7	Airbill Nu	ımber: NA			
Sampled By:	W	/indward Environmental LLC		Form filled out by:	Jennif	er Parker	/Dianne Janak	Turnarou	and requested: Standard			
						est(s) Reque	ested (check test(s) required)					
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			Comments / Instructions			
8/20/2009	13:03	LPR4-CSCT-Comp31	1	Tissue	Х	Х		14-Apr-10 10:11				
9/1/2009	12:33	LPR1-CSCT-Comp01	1	Tissue	Х	Х	MIKE	CHALLI	S			
9/2/2009	15:02	LPR1-CSCT-Comp02	1	Tissue	Х	Х						
9/2/2009	15:46	LPR1-CSCT-Comp03	1	Tissue	Х	Х	B044					
9/2/2009	15:46	LPR1-CSCT-Comp04	1	Tissue	Х	Х	AKP		FZ-13			
9/1/2009	14:04	LPR1-CSCT-Comp06	1	Tissue	X	Х	1 1	i	_			
9/2/2009	16:33	LPR1-CSCT-Comp07	1	Tissue	Х	х		Int	ternational Solid			
9/2/2009	12:49	LPR1-CSCT-Comp11	1	Tissue	Х	Х		A	Sample			
8/18/2009	11:41	LPR4-CSCT-Comp30	1	Tissue	Х	Х		9 H	leat Treat Required			
9/1/2009	12:49	LPR1-CSCT-Comp13	1	Tissue	Х	Х	High Risk material					
0		Total Number of Containers	10 of 24	Purchase Orde	r / Statem	ent of Wo	rk # MAX09_01LPR		Storage and Disposal			
1) Released by:	4	2) Released by:		3) Released by:			4) Released by:		NOTES Individual specimens were collected by			

1 land	
Company:	Company:
Date/Time	Date/Time:
Rec'd by:	Rec'd by:
Company: Date/Time:	Company: Date/Time:

2) Released by:

Company:
Date/Time:

3) Released by:

Company:
Company:
Date/Time:
Rec'd by:
Released by:

4) Released by:
Company:
Date/Time:
Rec'd by:

Company:

Date/Time:

NOTES
Individual specimens were collected by
Windward Environmental. The collection
date and time corresponds to the earliest
collected individual specimen within the
composite. Specimens were grouped
together into composites by Windward
onsite at Alpha Analytical. Alpha Analytical
processed and homogenized the

by Alpha Analytical.

composites; therefore, samples are released

Company: Date/Time:

To be completed by Laboratory upon sample receipt:

XXXX		VIand
	111	ywaru
* * * * * * * * * * * * * * * * * * * *		environmental LLC

TO be com	pieted by Laboratory upon sample receipt.	-
Date of receipt::	Laboratory W.O. #: 10 APR 14	
Condition upon receipt:	Time of receipt: 10/04/14 10:11	1-3.400
Cooler temperature:	Received by: 20174 Touth	

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame:	Pas	ssaic RI/FS Tissue		o:	Maxx	Maxxam Analytics					# LPR-MA-CT-B	
Project Number:	_	09.	58.02.31		Attn:	Mike	Mike Challis Ship					4/13/2010	
Contact Name:		Jer	nnifer Parker	9	hipper:	Maxx	am courie	er		Airbill I	Airbill Number: NA		
Sampled By:		Wir	ndward Environmental LLC	F	orm filled out by:	Jenni	fer Parkeı	r/Dianne Jan	ak	Turnar	ound reques	ted: Standard	
				\$			st(s) Reque	sted (check test	(s) required)				
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)					ments / Instructions ar tag number(s)]	
9/1/2009	12:09)	LPR2-CSCT-Comp14	1	Tissue	Χ	Х						
9/1/2009	11:03	}	LPR2-CSCT-Comp17	1	Tissue	X	X						
9/1/2009	10:02)	LPR2-CSCT-Comp15	1	Tissue	X	Χ,			-			
9/3/2009	12:35	;	LPR2-CSCT-Comp18	1	Tissue	Х	Х						
9/1/2009	11:32	2	LPR2-CSCT-Comp19	1	Tissue	Х	Х						
9/1/2009	11:32	2	LPR2-CSCT-Comp20	1	Tissue	Х	Х						
8/11/2009	10:08	3	LPR3-CSCT-Comp24	1	Tissue	Х	Х						
8/18/2009	07:43	3	LPR5-CSCT-Comp34	1	Tissue	X	X						
8/12/2009	10:29) .	LPR3-CSCT-Comp26	1	Tissue	X	Х						
8/18/2009	10:35	,	LPR4-CSCT-Comp32	1	Tissue	X	Χ						
	7	Т	otal Number of Containers	10 of 24	Purchase Orde	er / Statem	ent of Woı	k # MAX09_0	1LPR				
1) Released by:		4	2) Released by:		3) Released by:			4) Released by:			NOTES	-	
company Date/Timer Rec'd by:	32	- 505	Company: Date/Time: Rec'd by:		Company: Date/Time: Rec'd by:			Company: Date/Time: Rec'd by:			Windward date and ti collected ir composite. together in	pecimens were collected by Environmental. The collection me corresponds to the earliest dividual specimen within the Specimens were grouped to composites by Windward	

Company:

Date/Time:

Wind Ward environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date/Time:

To be completed by Laboratory upon	n sample receipt
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processed and homogenized the

by Alpha Analytical.

composites; therefore, samples are released

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: (0[04 [4 [0].[(
Cooler temperature:	Received by: 20174 22114 118 APR 1

Company:

Date/Time:

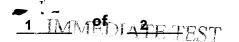
	فع" شد.		
•	3	of	3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tiss			/FS Tissue	<u>.</u>	То:	Maxxa	ım Analy	tics		# LPR-MA-CT-C			
Project Number	r:	09.58.02.3	1		Attn:	Mike C	Challis			Shipp	ing Date:	4/13/2010	
Contact Name:		Jennifer Pa	rker		Shipper:	Maxxa	m courie	7		Airbill Number:N		NA	
Sampled By:		Windward I	Environmental LLC		Form filled out by:	Jennife	er Parker	/Dianne Ja	nak	Turna	round reque	sted: Standard	
				1							· .		
						Te		sted (check to	est(s) required)				
						OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
						OC Pesticides (1699 Mod – NYSDEC HRMS-	Z9 N						
Sample Collection			# of		Pes 99 M SDEC	Hs ARB 4				Com	nments / Instructions		
Date (m/d/y)	Time	Sa	mple Identification	Containers	Matrix	Ø 6.5	A 9					ar tag number(s)]	
8/18/2009	12:01	LPR4-CS	GCT-Comp33	1	Tissue	Х	Х						
8/11/2009	07:21	LPR3-CS	CT-Comp27	1	Tissue	X	Х						
8/13/2009	11:52	LPR3-CS	CT-Comp28	1	Tissue	Х	Х						
8/21/2009	8/21/2009 13:46 LPR5-CSCT-Comp35		1	Tissue	X	Х							
												·····	
								<u> </u>					
								ļ			· · · · · · · · · · · · · · · · · · ·		
								<u></u>					
		Total Nun	nber of Containers	4 of 24	Purchase Orde	er / Statement of Work # MAX09_01LPR							
1) Released by:			2) Released by:		3) Released by:			4) Released	by:		NOTES		
_											1	specimens were collected by Environmental. The collection	
Company:			Company:		Company:	÷		Company:			date and t	me corresponds to the earliest	
	Date/Time: Date/Time:			Date/Time:			Date/Time:				ndividual specimen within the Specimens were grouped		
Rec'd by:	AL	-5/	Rec'd by:		Rec'd by:			Rec'd by:			together into composites by Windward		
Company:	H,		Company:		Company:			Company:			processed	lpha Analytical. Alpha Analytical and homogenized the	
Date/Time:	V4/1	3/10	Date/Time:		Date/Time:			Date/Time:				composites; therefore, samples are released by Alpha Analytical.	



То	To be completed by Laboratory upon sample receipt:							
Date of receipt::	Laboratory W.O. #:							
Condition upon receipt:	Time of receipt: (0 04 (4 (0):(
Cooler temperature:	Received by 70TH VERETA -2:11-							



CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tiss		RI/FS Tissue		_ <u>M</u>	axxam A	nalytics	COC ref erence	# LPR-MA-PI-A			
Project Number:	_(09.58.02.	31		Attn:	M	ke Challi	s	Shipping Date:	06/09/2010	
Contact Name:	_	Jennifer F	Parker		Shipper:	M	axxam C	ourier	Airbill Number:		
Sampled By:	· <u>'</u>	Windward Environmental LLC			Form filled out by: Jennifer Par		arker/Dianne Janak	Turnaround reque	Turnaround requested: Standard		
				<u> </u>		Т	est(s) Reque	ested (check test(s) req	11-Jun-10 09:59		
į.						.5		Sold (Greek test(s) Fed	MIKE CHA		
						cides 4 - IRMS	Moc				
Sample						Pesti Mod	8 429		B075209		
Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)		HSO	FZ-13	
8/25/2009	9:54	LPR6-	ELFT-Ind001	1	Tissue	Х	Х			[lar tag number(s)]	
9/19/2009	9:35	LPR5-	MSFT-Comp01	1	Tissue	Х	Х		_	ational Solid	
9/8/2009	10:09	LPR8-	MSFT-Ind002	1	Tissue	Х	Х				
9/18/2009	10:35	LPR5-	MSFT-Ind009	1	Tissue	Х	Х			ample reat Required	-
9/18/2009			1	Tissue	Х	Х		High Risk ma	-		
9/18/2009			1	Tissue	X	Х		Controlled Storage a			
9/10/2009	8:40	LPR8-	MDFT-Comp03	1	Tissue	Χ	Х			A the state of the	
8/25/2009	9:54	LPR6-	ELCT-Ind001	1	Tissue	X	X		-		
9/19/2009	9:35	LPR5-	MSCT-Comp01	1	Tissue	Χ	×				
9/8/2009	10:09	LPR8-	MSCT-Ind002	1	Tissue	Χ	Х				
		Total Nu	mber of Containers	10	Purchase Ord	ler / State	ment of V	Vork # MAX09_01LPR			
1) Released by:		1.	2) Released by:		3) Released by:			NOTES			
Mar	e//	-						Individual specimens were co			
Company:	(N)	The second secon	Company:		Company:			Specimens were grouped tog		•	
Date/Tippe:	1800	·)	Date/Time:		Date/Time:			Analytical. Alpha Analytical pr therefore, samples are release	ed by Alpha Analytical. Sar		
Rec'd by	-0		Rec'd by:		Rec'd by:			sample is an individual (Ind) o	or composite (Comp).		
Company: 7	11 XXX	بر د	Company: Date/Time:		Company: Date/Time:						
								To be completed l	by Laboratory up	on sample receip	t:
	/		200 West Me	ercer Street							

Wind Ward environmental LLC

Date of receipt::	Laboratory W.O. #: 18 HIR MISUTI							
Condition upon receipt:	Time of receipt: 10 06 11 03:19							
Cooler temperature: 2-9/31/2-7	Received by:							

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue			RI/FS Tissue	· · · · · · · · · · · · · · · · · · ·	Maxxam Analytics					OC reference:	# LPR-MA-PI-B			
Project Number:		09.58.02.3	31		Attn:	ike Challi	s	Shipping Date: 06/09/2010						
Contact Name:	_	Jennifer P	arker		Shipper:		axxam C	ourier		Air	Airbill Number:			
Sampled By:	<u> </u>	Windward Environmental LLC			Form filled out by	r: Je	nnifer Pa	rker/Dianr	ne Janak	Tu	Turnaround requested: Standard			
				7		T								
						T	T	ested (check t	test(s) require	ed) I				
Sample Collection Date (m/d/y)	Time	S	ample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)							
9/18/2009	10:35	LPR5-I	MSCT-Ind009	1	Tissue	Х	Х				1	ments / Instructions or tag number(s)]		
9/18/2009	13:50	LPR4-I	MDCT-Comp01	1	Tissue	Х	Х							
9/18/2009	10:35	LPR5-I	MDCT-Comp02	1	Tissue	Х	Х							
9/10/2009	8:40	LPR8-I	MDCT-Comp03	1	Tissue	X	X							
												100UN11 9:5		
												\$400 A		
												· · · · · · · · · · · · · · · · · · ·		
		Total Nu	mber of Containers	4	Purchase Orc	ler / State	ment of V	Vork # MA	X09_01LPR					
2) Released by: Company: Date/Time: Company: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the compos Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composit therefore, samples are released by Alpha Analytical. Sample names indicate whether t sample is an individual (Ind) or composite (Comp).							
/	′ /				<u> </u>		-	To be	complete	ed by Lal	oratory upo	n sample receipt:		

Ward Ward ELLC

Condition upon receipt:			11 09:19
Cooler temperature: 2913.112.70	Received by:	HAULA	Moss

. IMMEDIATE TEST

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: P	assaic RI/	/FS Tissue		То:	Ma	xxam A	nalytics		COC reference	# LPR-MA-RB3
Project Number:	: 0	9.58.02.31			Attn:	Mi	ke Challis	s		Shipping Date:	06/09/2010
Contact Name:	J	ennifer Pa	rker		Shipper:	Ma	xxam Co	ourier		Airbill Number:	
Sampled By:		Vindward E	Environmental LLC		Form filled out by:	Je	nnifer Pa	rker/Ellen	Collins	Turnaround requ	ested: Standard
											11-Jun-10 09:59
						Te	st(s) Reque	ested (check t	est(s) required)	MIKE	CHALLIS
Sample Collection Date (m/d/y)	Time	Sar	mple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				5260 ENV-755
6/8/2010	13:30	LPR-060	0810-RB	2	Water	Х	Х			1	mments / Instructions [lar tag number(s)]
											[In: Tay Humber(19)]
			14				-				· · · · · · · · · · · · · · · · · · ·
- Mile - 2 (- 2)											
							ş.,				
								141			
			-							-	
						1					16JW11 959
		Total Num	ber of Containers	2	Purchase Ord	er / Stateı	ment of V	Vork # MAX	(09_01LPR		
1) Released by:	, A		2) Released by:		3) Released by:			NOTES			
1 fim	The second										
Company:	41		Company:		Company:				A.		
Date/Timer	11200		Date/Time:		Date/Time:						
Rec'd by:	7/800		Rec'd by:		Rec'd by:						
Company: / Date/Time:	PAXXA		Company: Date/Time:		Company: Date/Time:	-	i.				
	7							To be	completed b	y Laboratory up	oon sample receipt:
	/	_	200 West M	ercer Street	Date of	receipt::			Labora	atory W.O. #:	

Ward Ward environmental LLC

Date of receipt::	Laboratory W.O. #:							
Condition upon receipt:	Time of receipt: 0 0 6 11 04: 54							
Cooler temperature: 5.6) 6.8 3.4°C	Received by: AS HIBASONI							

IMMEDIATE TEST

Project/Client Name:

of ₂

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343 **Maxxam Analytics**

LPR-MA-CF-A

10/06

COC ref erence

Project Number: 09.58.02.31				Attn:	_Mi	ke Challi	S	Shipping Date: 06/16/2010			
Contact Name:	_Je	nnifer Parker		Shipper:	_Ma	axxam co	ourier	Airb	ill Number: NA		
Sampled By:	_Wi	ndward Environmenta	al LLC	Form filled out b	y: <u>Je</u>	nnifer Pa	arker/Dianne Janal	Turnaround requested: Standard			
					Te	est(s) Reque	ested (check te		17-Jun-10 09:42		
Sample Collection Date (m/d/y)	Time	Sample Identificat	# of ion Containers	; Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)		MIKE C 	FZ-13		
8/11/2009	9:25	LPR3-CCFT-Ind001	1	Tissue	X	Х		. I	240mg4fors - I.O. 11 I.		
8/15/2009	8:50	LPR3-CCFT-Ind004	1	Tissue	Х	Х			nternational Solid —		
8/25/2009	9:54	LPR6-CCFT-Ind032	1	Tissue	Х	Х			Sample —		
8/27/2009	9:01	LPR7-CCFT-Ind068	1	Tissue	Х	Х	-		Heat Treat Required Risk material		
8/28/2009	9:32	LPR7-CCFT-Ind092	1	Tissue	Х	Х		Controlled	Storage and Disposal		
8/29/2009	8:10	LPR6-CCFT-Ind104	1	Tissue	Х	X					
9/8/2009	7:48	LPR8-CCFT-Ind121	1	Tissue	Х	Х					
9/9/2009	9:15	LPR8-CCFT-Ind131	1	Tissue	Х	Х					
9/17/2009	10:49	LPR4-CCFT-Ind155	1	Tissue	Х	X					
9/17/2009	11:05	LPR4-CCFT-Ind156	1	Tissue	Х	Χ					
	1	Total Number of Conta	iners 10 of 12	Purchase Or	Purchase Order / Statement of Work # MAX09_01LPR						
1) Released by: Company: Date/Time: Company: Date/Time:	1310 1310 1016/1	2) Released by Company: Date/Time: Rec'd by: Company: Date/Time:	•	3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time correspond Specimens were grou Analytical. Alpha Ana	s to the earliest co uped together into lytical processed a re released by Alph	Windward Environmental. The collection of illected individual specimen within the confection of composites by Windward onsite at Alpha and homogenized the individuals and compa Analytical. Sample names indicate whet ite (Comp).	nposite. 1 1posites;	
	1 1						To be compl	eted by Lab	oratory upon sample receip	ıt:	
······································			West Mercer Street e 401	Date o	of receipt::			Laboratory W.O. #:			

Condition upon receipt:

-13.1/-12.7/-12.1°C

Time of receipt:

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2	of	2

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Maxxam Analytics

Project/Client Name: Passaic RI/FS Tissue			•	To:	nalytics		COC reference: # LPR-MA-CF-B					
Project Number:		.58.02.31		Attn:		/like Challis	3		Ship	ping Date:	06/16/2010	ļ
Contact Name:		nnifer Parker		Shipper:		/laxxam co	urier		Airb	ill Number:	NA	
Sampled By:		ndward Environmental LLC		Form filled out by	y: J	ennifer Pa	rker/Dianr	e Janak	Turr	naround reque	sted: Standar	rd
						Test(s) Reque	sted (check	test(s) required)	1			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
9/19/2009	11:00	LPR5-CCFT-Ind181	1	Tissue	X	Х				į.	nments / Instructi ar tag number(s)	
9/19/2009	11:33	LPR5-CCFT-Ind184	1	Tissue	X	X					<u>u_ing</u>	
771772007	11.00	El No Coll III al c										
	-	Total Number of Containers	2 of 12	Purchase Or	der / Stat	tement of V	Vork # MA	X09_01LPR				
1) Released by: Company: Date/Time: Company: Date/Time:	1310 1310 14XA	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time Specimen Analytical therefore, sample is	corresponds to th s were grouped to . Alpha Analytical samples are relea an individual (Ind	e earliest co ogether into processed a ased by Alpi or compos	ollected individua o composites by and homogenize ha Analytical. Sar site (Comp).	onmental. The colle il specimen within t Windward onsite at d the individuals an inple names indicate TO JUN	the composite. t Alpha nd composites; e whether the
	$l^{-\iota}$						To b	e completed	by Lab	oratory up	on sample re	ceipt:
	/	200 West M	ercer Street	Date o	f receipt::			Lab	oratory W	.O. #:		

Suite 401 Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
72 (0/06//7 Cooler temperature: 131 127 12.19(Received by: 20F14 25AUA 10/06
-13.11-12.7 -12.1°C	

LPR-MA-CF-B

COC reference:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ame: Pa	ssaic RI/FS Tissue		То:	М	axxam A	nalytics	COC ref erence	# LPR-MA-WB-A
Project Number:	09	.58.02.31		Attn:	M	ike Challi	s	Shipping Date:	06/16/2010
Contact Name:	Je	nnifer Parker		Shipper:	Shipper: Maxxam courier			Airbill Number:	
Sampled By:	W	indward Environmental LLC		Form filled out by	/: Je	ennifer Pa	arker/Dianne Janak	Turnaround req	uested: Standard
								•	
} }						est(s) Reque	ested (check test(s) requ		7-Jun-10 09:38
					es (S-2)	(po		MIKE C	HALLIS
					OC Pesticides (1699 Mod – NYSDEC HRMS-2)	429 Mod)			IIII
Sample Collection			# of		Pes 99 M	Hs RB 4		B07823	
Date (m/d/y)	Time	Sample Identification	# OI Containers	Matrix	0C (169 NYSI	PAHs (CARB		HSO	FZ-13
8/11/2009	9:25	LPR3-CCWB-Ind002	1	Tissue	Х	Х		1 Junione	orage and Disposar
8/15/2009	8:50	LPR3-CCWB-Ind005	1	Tissue	Х	Х			ernational Solid –
8/19/2009	10:03	LPR5-CCWB-Ind011	1	Tissue	Х	Х			Sample –
8/25/2009	7:30	LPR6-CCWB-Ind021	1	Tissue	Х	х		I W He	eat Treat Required
8/25/2009	8:43	LPR6-CCWB-Ind028	1	Tissue	Х	Х			isk material
8/25/2009	11:33	LPR7-CCWB-Ind042	1	Tissue	Х	Х		Controlled Sta	orage and Dienocal
8/27/2009	9:01	LPR7-CCWB-Ind069	1	Tissue	Х	Х			
9/12/2009	7:58	LPR8-CCWB-Ind139	1	Tissue	Х	Х			
9/12/2009	10:57	LPR8-CCWB-Ind147	1	Tissue	Х	Х			
9/18/2009	10:35	LPR5-CCWB-Ind160	1	Tissue	X	Х			
		Total Number of Containers	10 of 18	Purchase Ord	der / State	ment of V	Nork # MAX09_01LPR		
1) Released by: Company: Date/Rime:	A -	2) Released by: Company: Date/Time:		3) Released by: Company: Date/Time:			and time corresponds to Specimens were groupe Analytical. Alpha Analyt	o the earliest collected indivi- ed together into composites ical processed and homogen	nvironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha ized the individuals and composites;
Company Date/Time:	1325 NAXXA	Rec'd by: Company: Date/Time:		Rec'd by: Company: Date/Time:	therefore, samples are released by Alpha Analytical. Sample names indicate sample is an individual (Ind) or composite (Comp).			indicate whether the care indicate whether t	
<u> </u>		<u> </u>			-		To be complet	ed by Laboratory ι	pon sample receipt:
	/	200 West N	Mercer Street	Date of	receipt::			aboratory W.O. #:	
	1 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3	→ 1 Suite 401		Dute of	.cccipt				



Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature: 12.3 H2-9 -11.9°C	Received by: 201714 251474

Project/Client Name:

Passaic RI/FS Tissue

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

Maxxam Analytics

#LPR-CAS-WB-B

COC reference:

Time of receipt:

Received by: 2017)4

Project Number:	09.	58.02.31		Attn:	Mi	ike Challis Shipping Date: 06/16/2010				
Contact Name:	Jer	nnifer Parker		Shipper:	Ma	Maxxam courier Airbill Number:				
Sampled By:	Wi	ndward Environmental LLC		Form filled out by	ut by: Jennifer Parker/Dianne Janak Turnaround requested: Standar			naround requested: Standard		
					Te	est(s) Reque	ested (check test(s) require	ed)		
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)		·	Comments / Instructions [Jar tag number(s)]	
9/18/2009	13:50	LPR4-CCWB-Ind175	1	Tissue	х	х				
9/19/2009	12:10	LPR4-CCWB-Ind186	1	Tissue	Х	Х				
8/12/2009	9:27	LPR3-ANWB-Ind001	1	Tissue	Х	Х				
8/28/2009	8:05	LPR6-ANWB-Ind004	1	Tissue	Х	Х				
9/16/2009	10:08	LPR4-ANWB-Ind007	1	Tissue	Х	Х				
8/28/2009	7:24	LPR6-ANWB-Ind003	1	Tissue	Х	Х				
8/29/2009	11:01	LPR6-ANWB-Ind005	1	Tissue	Х	Х				
8/29/2009	11:44	LPR7-ANWB-Ind006	1	Tissue	Х	Х				
	1	Total Number of Containers	8 of 18	Purchase Ord	der / State	ment of V	Work # MAX09_01LPR			
1) Released by: Company: Date/Time: Company: Date/Time:	1325 NAXX	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds to Specimens were groupe Analytical. Alpha Analyti therefore, samples are re sample is an individual (I	the earliest co d together into cal processed a eleased by Alpi (ind) or compos	123/229/-11-9 1000017 9:39 12.3/12.9/11.9	
							To be complet	ed by Lab	oratory upon sample receipt:	
		200 West M	ercer Street	Date of	f receipt::		1	aboratory W	(O.#:	

Condition upon receipt:

Cooler temperature: (2.3/12.9/11.9°(

Project/Client Name: Passaic RI/FS Tissue			То:	М	axxam A	nalytics		со	C reference	# LPR-MA	\-RB4		
Project Number:	:	09.58.0	2.31		Attn: Mike Challis					Shi	pping Date:	06/16/201	0
Contact Name: Jennifer Parker				Shipper:	Maxxam courier					Airbill Number: NA			
Sampled By:		Windwa	ard Environmental LLC		Form filled out by				Collins	Tur	naround requ	ested: Stan	dard
		Ī				Т	est(s) Requ	ested (check	test(s) require	ed)		The same of the sa	
Sample Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
6/15/2010	14:15	LPR-	-061510-RB	2	Water	Х	Х					mments / Instru [lar tag numbe	
										******		par ray numbe	1(5)]
			*										
	· · · · · · · · · · · · · · · · · · ·												
								1				· · · · · · · · · · · · · · · · · · ·	
		Total N	Number of Containers	2	Purchase Ord	er / State	ment of V	Vork # MA	X09_01LPR				
1) Released by:	6		2) Released by:		3) Released by:			NOTES					
dones	_												
Company:	41		Company:		Company:								
Date Fime:	1310		Date/Time:		Date/Time:								
Rec d by	13/0		Rec'd by:		Rec'd by:								
								÷				10 JL	N17 9:3
Company: // Date/Time:	16/1	10	Company: Date/Time:		Company: Date/Time:								
	7							To be	complete	d by Lab	oratory up	on sample	receipt:
. •	/		200 West Me	rcer Street	Date of	racaint»				5 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			1

Wind Ward environmental LLC

10 bc compr	cica by Laboratory upon sample receipt:
Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature: 2.9/2.7/1.9°C	Received by: 2017 ZERECH LOGO

MMEDIATE TEST

of 1

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue			То:	axxam A	nalytics		COC reference	# LPR	R-MA-RB5			
Project Number:	Number: 09.58.02.31					M	ike Challi	is	Shipping Date:	06/29/	/2010	
Contact Name:					Shipper: Maxxam courier					 Airbill Number:	NA	
Sampled By:	W	/indward E	nvironmental LLC		Form filled out	by: Je	nnifer Pa	arker/Ellen	Collins	Turnaround red	juested: S	Standard
											NATION AND ADDRESS OF THE PARTY	
						Т	T T	ested (check	test(s) required)			
Sample Collection Date (m/d/y)	Time	San	nple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				omments /	Instructions
6/29/2010	10:40	LPR-062	910-RB	2	Water	X	X				[lar tag_nu	
							100 mg				KE CHA 	
					Nass							
		Total Num	ber of Containers	2	Purchase (Order / State	ment of \	Work # MA	X09_01LPR			
Ompany: Office by: Company: Office by: Company: Date/Time:	1045 1045 1045 1040		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released b Company: Date/Time: Rec'd by: Company: Date/Time:	y:		NOTES				
<u> </u>								To b	e completed	by Laboratory ι	upon sam	nple receipt:
200 West Mercer Street Suite 401			ercer Street	Date	of receipt::				oratory W.O. #:			
Win	/W environ	/ard	Seattle, WA		Cond	dition upon rec				of receipt: [O[06/3 6	2011 0

IMMEDIATE TEST CHAIN-O

International Solid Sample Heat Treat Required

JEST FORM

High Risk material Passaic RI/FS Tissue Project/Client Name: COC ref erence # LPR-MA-CATC-A Controlled Storage and Disposal Project Number: Task 16.1 (09.58.02.31) Mike Challis Attn: Shipping Date: 07/07/2010 Contact Name: Jennifer Parker Shipper: Maxxam courier Airbill Number: Windward Environmental LLC Sampled By: Form filled out by: Jennifer Parker/Dianne Janak Turnaround requested: Standard Test(s) Requested (check test(s) required) OC Pesticides (1699 Mod – NYSDEC HRMS-2) 429 Mod) Sample PAHs (CARB 4 Collection # of Comments / Instructions Date (m/d/y) Time Sample Identification Containers Matrix [Jar tag number(s)] 9/12/2009 9:35 LPR8-WSCT-Ind009 Tissue Χ 1 Х 9-Jul-10 09:05 9/12/2009 11:16 LPR8-WSCT-Ind013 MIKE CHALLIS 1 Tissue Х Х 9/15/2009 8:34 LPR5-WSCT-Ind019 1 Tissue Χ Χ 9/18/2009 11:57 LPR5-WSCT-Ind020 1 Х Tissue Х B090038 9/18/2009 14:10 LPR4-WSCT-Ind023 1 Tissue Х Χ **DKN** FZ-13 8/18/2009 8:15 LPR5-IPCT-Ind001 1 Χ Tissue Х 8/25/2009 7:17 1 LPR6-IPCT-Ind003 Tissue Χ Х 8/26/2009 8:29 1 Tissue LPR6-IPCT-Ind004 Χ Х 8/26/2009 10:18 LPR7-IPCT-Ind005 1 Х Х Tissue 8/27/2009 9:34 LPR7-IPCT-Ind006 1 Х Tissue Х **Total Number of Containers** 10 of 35 **Purchase Order / Statement of Work # MAX09_01LPR** 1) Released by 2) Released by: 3) Released by: NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Company: Company: Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; Date/Time: Date/Time: therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp). Rec'd by: Rec'd by: Company: Company: Company: Date/Time: Date/Time: Date/Time: To be completed by Laboratory upon sample receipt:

Wind Ward environmental LLC

200 West Mercer Street Suite 401

Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt: 10/07/09
Cooler temperature: 1,0/3,71 2.6	Received by: Abella

1-1/2-1/2-2-

MIKE CHALLIS



DKN

TEST REQUEST FORM

Passaic RI/FS Tissue Project/Client Name:

Task 16.1 (09.58.02.31)

Jennifer Parker

Contact Name: Sampled By:

Project Number:

Windward Environmental LLC

FZ-13

Shipper:

Form filled out by:

Maxxam Analytics	COC reference:	# LPR-MA-CATC-B
Mike Challis	Shipping Date:	07/07/2010
Maxxam courier	Airbill Number:	
Jennifer Parker/Dianne Janak	Turnaround reques	sted: Standard

[22.20.20.20.20.20.20.20.20.20.20.20.20.2							
					Te	st(s) Reque	uested (check test(s) required)
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	Comments / Instructions [Jar tag number(s)]
9/9/2009	9:15	LPR8-IPCT-Ind008	1	Tissue	Х	Х	
9/9/2009	9:15	LPR8-IPCT-Ind009	1	Tissue	Х	Х	
9/10/2009	13:02	LPR8-IPCT-Ind010	1	Tissue	Х	Х	
9/10/2009	13:02	LPR8-IPCT-Ind011	1	Tissue	X	Х	
9/10/2009	13:02	LPR8-IPCT-Ind012	1	Tissue	Х	Х	
9/10/2009	13:02	LPR8-IPCT-Ind013	1	Tissue	Х	Х	
8/11/2009	11:08	LPR3-ACCT-Ind001	1	Tissue	Х	Х	
8/11/2009	11:30	LPR3-ACCT-Ind002	1	Tissue	Х	Х	
8/13/2009	10:26	LPR3-ACCT-Ind003	1	Tissue	Х	Х	
8/14/2009	9:04	LPR3-ACCT-Ind005	1	Tissue	Х	Х	
	1	otal Number of Containers	10 of 35	Purchase Ord	ler / Stateı	ment of W	Work # MAX09_01LPR
Company: Date/Time: Company: Date/Time:	1733 1733 14 KXTY	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites, therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).

environmental LLC

200 West Mercer Street Suite 401

Seattle, WA 98119 Tel: (206) 378-1364 Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt: Date of receipt:: Laboratory W.O. #:

Condition upon receipt: Cooler temperature: [

Time of receipt: Received by:

MIKE CHALLIS

B090038

Project/Client Name: Project Number: Passaic RI/FS Tissue

Windward Environmental LLC

Task 16.1 (09.58.02.31)

DKN FZ-13

Contact Name: Sampled By: Jennifer Parker

Initer Parker

silippei.

Form filled out by:

TEST REQUEST FORM

Maxxam Analytics	COC reference: # LPR-MA-CAT	C-C
Mike Challis	Shipping Date: 07/07/2010	
Maxxam courier	Airbill Number:	
Jennifer Parker/Dianne Janak	Turnaround requested: Standard	

					Test(s) Requested (check test(s) required)					
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				Comments / Instructions [Jar tag number(s)]
8/19/2009	10:51	LPR5-ACCT-Ind006	1	Tissue	Х	Х				
8/25/2009	8:25	LPR6-ACCT-Ind008	1	Tissue	Х	Х				
8/25/2009	8:25	LPR6-ACCT-Ind009	1	Tissue	Х	Х				
8/26/2009	7:55	LPR6-ACCT-Ind010	1	Tissue	Х	Х				
8/27/2009	7:27	LPR6-ACCT-Ind013	1	Tissue	Х	Х				
8/27/2009	9:48	LPR7-ACCT-Ind014	1	Tissue	Х	Х				
8/29/2009	11:11	LPR6-ACCT-Ind016	1	Tissue	Х	Х				
8/29/2009	12:06	LPR7-ACCT-Ind017	1	Tissue	Х	Х				
9/2/2009	14:13	LPR2-ACCT-Ind018	1	Tissue	Х	Х				
9/8/2009	8:04	LPR8-ACCT-Ind019	1	Tissue	Х	Х				
	, 1	otal Number of Containers	10of 35	Purchase Ord	Order / Statement of Work # MAX09_01LPR					
Company: Company: Company: Company: Company: Company: Date/Time:		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite. Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites; therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).			

Cooler temperature:

Wind Ward Environmental LLC

200 West Mercer Street Suite 401

Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Date of receipt::

Condition upon receipt:

Laboratory W.O. #:

Time of receipt: 10/0 4/0 9 9:05

Received by: As

To be completed by Laboratory upon sample receipt:

1/21/2.20

9-Jul-10 09:05

of `

MIKE CHALLIS

B090038

Passaic RI/FS Tissue

DKN

Maxxam Analytics Mike Challis

Maxxam courier

/TEST REQUEST FORM

#LPR-MA-CATC-D COC reference:

Project Number:

Project/Client Name:

Task 16.1 (09.58.02.31)

FZ-13

07/07/2010 Shipping Date:

Contact Name:

Jennifer Parker

Shipper:

Airbill Number:

Sampled By:

Windward Environmental LLC

Form filled out by:

Jennifer Parker/Dianne Janak Turnaround requested: Standard

		The state of the s			·					
						est(s) Reque	sted (check t	est(s) require	d)	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				Comments / Instructions [Jar tag number(s)]
9/8/2009	8:44	LPR8-ACCT-Ind020	1	Tissue	Х	х				
9/8/2009	8:44	LPR8-ACCT-Ind021	1	Tissue	Х	Х				
9/10/2009	13:02	LPR8-ACCT-Ind022	1	Tissue	х	Х				
9/17/2009	11:05	LPR4-ACCT-Ind023	1	Tissue	Х	Х				
9/18/2009	11:15	LPR5-ACCT-Ind024	1	Tissue	Х	Х				
	:									
							<u> </u>			
	1	otal Number of Containers	5 of 35	Purchase Ord	der / State	ment of W	ork # MA	(09_01LPR		
1) Released by: Company: Rec'd by: Company: Date/Time:	1730 1730	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composites therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).			

environmental LLC

200 West Mercer Street Suite 401

Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Date of receipt::

Condition upon receipt:

Cooler temperature:

To be completed by Laboratory upon sample receipt: Laboratory W.O. #:

Time of receipt:

Received by:

1	of'	4
---	-----	---



International Solid Sample Heat Treat Required

9-Jul-10 09:05 MIKE CHALLIS



Project/Client Name: Passaic RI/FS T Task 16.1 (09.58				Controlled S	kisk material torage and Dispo Attn:	sal Mi	<u>:</u> ke	ASR	FZ-13	erence # LPR-MA-CATF-Ag Date: 07/07/2010	
ontact Name:	-	nnifer Par	·ker		Shipper:	Ma	axxam co	urier	 Airb	ill Number:	
ampled By:	W	ndward Environmental LLC Fo			orm filled out by:	Form filled out by: Jennifer Park			Turr	naround requested: Standard	
						Tz	sct(s) Reque	ested (check test(s) requi	red)		
Sample Collection Date (m/d/y)	Time	Time Sample Identification		# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	Stea (effect test(s) requi		Comments / Instructions [Jar tag number(s)]	
9/12/2009	9:35	LPR8-WS	FT-Ind009	1	Tissue	X	Х				
9/12/2009	11:16	LPR8-WS	FT-Ind013	1	Tissue	Х	Х				
9/15/2009	8:34	LPR5-WS	FT-Ind019	1	Tissue	Х	Х				
9/18/2009	11:57	LPR5-WS	FT-Ind020	1	Tissue	Х	Х				
9/18/2009	14:10	LPR4-WS	FT-Ind023	1	Tissue	Х	Х				
8/18/2009	8:15	LPR5-IPF	T-Ind001	1	Tissue	Х	Х				
8/25/2009	7:17	LPR6-IPF	T-Ind003	1	Tissue	Х	Х				
8/26/2009	8:29	LPR6-IPF	T-Ind004	1	Tissue	Х	Х				
8/26/2009	10:18	LPR7-IPF	T-Ind005	1	Tissue	Х	Х				
8/27/2009	9:34	LPR7-IPF	T-Ind006	1	Tissue	X	Х				
	•	Total Num	ber of Containers	10 of 35	Purchase Ord	er / State	ment of V	Vork # MAX09_01LPF	L		
1) Released by: Company: Date/Time Company: Date/Time:	ompany: ate/Time: 1730 ec'd by: Company: Company: Company: Company:				3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composite Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composite therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).			
7		•						To be comple	ted by Lab	oratory upon sample receipt:	

Date of receipt::

environmental LLC

200 West Mercer Street Suite 401 Seattle, WA 98119 Tel: (206) 378-1364

Fax: (206) 217-9343

Condition upon receipt:	Time of receip
Coolor tomporatura:	
1.1/2.1/2.200	

Laboratory W.O. #:	
Time of receipt:	0 2109 9.05
Received by: Asc. 3 mg	Friede

eceived by: Asciance

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue					To:	Maxxam Analytics					C reference:	# LPR-MA-CATF-B	
roject Number:	Ţ	Task 16.1	(09.58.02.31)		Attn:	Mi	ke Challis	3		Ship	oping Date:	07/07/2010	
Sontact Name:	_ <u>J</u>	lennifer Pa	arker		Shipper:	_Ma	axxam co	urier		Airb	oill Number:		
ampled By:		Vindward	Environmental LLC		Form filled out by	: <u>Je</u>	nnifer Par	rker/Diann	e Janak	Turi	naround reque	sted: Standard	
	 			r	, 	·					T		
Š					Test(s) Requested (check test(s) required)								
>						OC Pesticides (1699 Mod – NYSDEC HRMS-2)	des MS-2 MS-2						
<u>.</u>						sticic fod –	OC Pesticides (1699 Mod – NYSDEC HRMS-2; PAHs (CARB 429 Mod)						
Sample Collection				# of		C Pes	Hs ARB 4				Com	ments / Instructions	
Date (m/d/y)	Time	S	ample Identification	Containers	Matrix	Ŏ Đ Ž	D (3 R) (3 R) (3 R)				1	ar tag number(s)]	
9/9/2009	9:15	LPR8-IP	PFT-Ind008	1	Tissue X X								
9/9/2009	9:15	LPR8-IP	PFT-Ind009	Tissue	Х	Х							
9/10/2009	13:02	LPR8-IP	PFT-Ind010	1	Tissue	Х	Х						
9/10/2009	13:02	LPR8-IPFT-Ind011 1			Tissue	Х	Х						
9/10/2009	13:02	LPR8-IP	PFT-Ind012	1	Tissue	Х	Х						
9/10/2009	13:02	LPR8-IP	PFT-Ind013	1	Tissue	X	X						
8/11/2009	11:08	LPR3-A	CFT-Ind001	1	Tissue	Х	Х						
8/11/2009	11:30	LPR3-A	CFT-Ind002	1	Tissue	Х	Х						
8/13/2009	10:26	LPR3-A	CFT-Ind003	1	Tissue	Х	Х						
8/14/2009	9:04	LPR3-A	CFT-Ind005	1	Tissue	Tissue X X							
		Total Nu	mber of Containers	10 of 35	Purchase Ord	er / State	ment of W	ork # MA	K09_01LPR				
1) Released by:	10	,	2) Released by:		3) Released by:			NOTES					
Mare	4							1	•			onmental. The collection date specimen within the composite.	
Company	(A)		Company:		Company:			1 '	• .	_		Vindward onsite at Alpha I the individuals and composites;	
Date/Time:	7 ·		Date/Time:		Date/Time:			therefore,	samples are releas	sed by Alph	na Analytical. Sam	ple names indicate whether the	
Rec's by:	1730		Rec'd by:		Rec'd by:			sample is a	n individual (Ind)	or compos	site (Comp).		
Company: U_{ℓ}	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1												
Date/Time:	e: 7/7//o Date/Time: Date/Time:												
								To be	completed	by Lab	oratory upo	on sample receipt:	
0	/		200 West Me	rcer Street	Date of	receint				raton/W			

Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

Date of receipt::

Condition upon receipt:

Cooler temperature:

Laboratory W.O. #:

Time of receipt:

Received by:

Aski N.W. SUKUAJAN

1.1/2.1/2.300

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	Го:	Maxxam Analytics				CO	COC reference: # LPR-MA-CATF-C					
groject Number:	_Ta	ask 16.1 (09.58.02.31)		Attn:	M	ike Challis	3		Shi	Shipping Date: 07/07/2010		
ontact Name:	<u>Je</u>	ennifer Parker		Shipper:	_M:	axxam co	urier		Air	bill Number:		
sampled By:	W	indward Environmental l	LC	Form filled out by: Jennifer Parker			rker/Dianr	ker/Dianne Janak Turnaround requested: Standard				
 ≤ • • • • • • • • • • • • • • • • • • •				·								
				Test(s) Requested (check test(s) requi			test(s) require	ed)				
Sample Collection Date (m/d/y)	Time	Sample Identification	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				Co	omments / Instructions [Jar tag number(s)]		
8/19/2009	10:51	LPR5-ACFT-Ind006	1	Tissue	Х	Х						
8/25/2009	8:25	LPR6-ACFT-Ind008	1	Tissue	Х	Х						
8/25/2009	8:25	LPR6-ACFT-Ind009	1	Tissue	Х	Х				·		
8/26/2009	7:55	LPR6-ACFT-Ind010	1	Tissue	Х	Х			-			
8/27/2009	7:27	LPR6-ACFT-Ind013	1	Tissue	Х	Х						
8/27/2009	9:48	LPR7-ACFT-Ind014	1	Tissue	Х	Х						
8/29/2009	11:11	LPR6-ACFT-Ind016	1	Tissue	Х	Х	-					
8/29/2009	12:06	LPR7-ACFT-Ind017	1	Tissue	Х	Х						
9/2/2009	14:13	LPR2-ACFT-Ind018	1	Tissue	X	Х						
9/8/2009	8:04	LPR8-ACFT-Ind019	1	Tissue	X	Х						
		Total Number of Containe	ers 10of 35	Purchase Ord	der / State	ment of W	ork # MA	X09_01LPR				-
2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:				3) Released by: Individual specim and time corresp Specimens were Analytical. Alpha therefore, sample				corresponds to swere grouped Alpha Analytic samples are rel	ecimens were collected by Windward Environmental. The collection date responds to the earliest collected individual specimen within the composite. ere grouped together into composites by Windward onsite at Alpha pha Analytical processed and homogenized the individuals and composites; mples are released by Alpha Analytical. Sample names indicate whether the individual (Ind) or composite (Comp).			s;
33 of 84497	/ /	200 We				To be	complete	ed by Lab	oratory u	pon sample receipt:		
8 4 9	Date of	receipt::			La	boratory W	<u>/.o. #:</u>					

Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

Date of receipt::

Condition upon receipt: 1.0/3.7/2.6 Time of receipt: 1.0/3.7/2.6 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.1/2.2 Received by: Asia in the condition upon receipt: 1.1/2.2 Received by: 1.1/2.2 Recei

őf 4

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	ient Name: Passaic RI/FS Tissue To: Maxxam Analytics							COC reference: # LPR-MA-CATF-D					
groject Number:	T	ask 16.1 (09.58.02.31)		Attn:	М	ike Challis	S		Shi	ipping Date:	07/07/2010	
ਤੇ &ontact Name:	J	ennifer Pa	rker		Shipper:	М	axxam co	urier		Air	Airbill Number:		
글 S ampled By:	٧	/indward E	Environmental LLC		Form filled out by: Jennifer F			rker/Diann	e Janak	Tur	rnaround reque	ested: Standard	
 <u>≤</u>													
TEXX X						ТТ	est(s) Reque	sted (check t	est(s) required)		4		
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2) PAHs (CARB 429 Mod)					nments / Instructions Jar tag number(s)]		
9/8/2009	8:44	LPR8-AC	CFT-Ind020	1	Tissue	Х	X						
9/8/2009	8:44	LPR8-AC	CFT-Ind021	1	Tissue	Х	Х						
9/10/2009	13:02 LPR8-ACFT-Ind022 1				Tissue	X	X						
9/17/2009	11:05	LPR4-AC	CFT-Ind023	1	Tissue	X	Х						
9/18/2009	1/18/2009 11:15 LPR5-ACFT-Ind024 1				Tissue	Х	Х						
												· · · · · · · · · · · · · · · · · · ·	
							-						
								<u> </u>					
						<u> </u>		<u> </u>					
		Total Nun	nber of Containers	5 of 35	Purchase Ord	der / State	ment of W	/ork # MA	X09_01LPR				
2) Released by: Company: Date/Time: Rec'd by: Company: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time: Date/Time:					3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:	Individual specimens were and time corresponds to the Specimens were grouped to Analytical. Alpha Analytical therefore, samples are releasingly sample is an individual (Individual). Company:					collected individua to composites by and homogenize oha Analytical. Sar osite (Comp).	d the individuals and composites; mple names indicate whether the	
24 of 849	/ /		200 Mast NA	arcar Straat				To be	completed	by Lab	oratory up	on sample receipt:	
200 West Mercer Street					Date of		Laboratory W.O. #;						

Ward Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

Condition upon receipt:

Cooler temperature: 1.1/2.1/2.200

Laboratory W.O. #:

Time of receipt: Lo(o 7 0 9 05

Received by:

Ashello

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	saic RI/FS Tissue	- 	To:			xam Aı	nalytics		COC ref erence	e ;	# LPR-MA-PERWB-A		
Project Number:		Task	(16.1 (09.58.02.31)		Attn:		Mike	Challis	3		_ Shipping Date	: _(07/13/2010
Contact Name:	_	Jenn	nifer Parker		Shipper:		Maxx	kam co	urier		Airbill Number	r: _	NA
Sampled By:		Wind	dward Environmental LLC		orm filled o	lled out by: Jennifer Parker/			rker/Dianne	Janak	Turnaround re	questec	: Standard
					1	T	Test(s	s) Reque	sted (check test	(s) require	ed)		15-Jul-10 10:14
	-					1.0							CHALLIS
						cides	IRMS	Ψ					
Sample		Pesti 9 Mo				B093	3245						
Collection Date (m/d/y)	Time		Sample Identification	# of Containers	Matrix	OC F	OC Pesticides (1699 Mod – NYSDEC HRMS-2) PAHS (CARB 429 Mod)			ABH	ENV-231		
9/2/2009	15:46	Tı	_PR1-MACT-Ind145	1	Tissue	X		Χ				C	omments / Instructions [lar tag number(s)]
8/11/2009	7:21	l	_PR3-MAWB-Comp06	1	Tissue	X		Χ					. , , , ,
8/13/2009	11:52		_PR3-MAWB-Comp09	1	Tissue	X		Χ					
8/13/2009	11:52		_PR3-MAWB-Comp10	1	Tissue	X		Χ					
8/13/2009	11:52	52 LPR3-MAWB-Comp11		1	Tissue	; X		Χ					
8/13/2009	11:52	L	_PR3-MAWB-Comp12	1	Tissue) X		Χ					
8/13/2009	11:52		PR3-MAWB-Comp30	1	Tissue			X	ļ ·				International Solic
8/25/2009	11:09	L	PR7-MAWB-Ind123	1.	Tissue			X				P)	Sample
8/26/2009	10:37	1	_PR7-MAWB-Comp25	1	Tissue			X	ļ		U	<i>1</i>	Heat Treat Required
8/27/2009	6:56		_PR6-MAWB-Ind128	1	Tissue) X		X					High Risk material
		To	tal Number of Containers	10 of 20	Purchase Order / Stat			Statement of Work # MAX09_01LPR					lled Storage and Disposal
1) Released by:	4	,	2) Released by:		3) Released by:			NOTES			o and antend by Mila	aline and For	vironmental. The collection date
Marie	the				-				and time corre	esponds to	the earliest collecte	ed indivic	dual specimen within the composite.
Company	HLS		Company:		Company:						-	•	by Windward onsite at Alpha ized the individuals and composites;
Date/Tipe:	11/20	_	Date/Time:		Date/Time	e:			therefore, san	nples are re	leased by Alpha An	nalytical. S	Sample names indicate whether the
Rec'd by:				Rec'd by:				sample is an i	naiviauai (i	nd) or composite ((comp).		
Company: HAIX CONTRACTOR			Company:		Company:								
Date/Time: Date/Time:				Date/Time	e: 								
									To be c	omplet	ed by Labora	tory u	pon sample receipt:
200 West Mercer Stree Suite 401			ercer Street	Da	ite of receipt	: 201	10/07	/ 07 / 15 Laboratory W.O. #:					
Ward Seattle, W				98119	Со	ndition upoi	dition upon receipt:			Т	Time of receipt: /o :/4		

Cooler temperature:

Tel: (206) 378-1364 Fax: (206) 217-9343

2	0	f	2

Project/Client Name:

Project Number:

Passaic RI/FS Tissue

Task 16.1 (09.58.02.31)

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Attn:

Maxxam Analytics

Mike Challis

13093245

LPR-MA-PERWB-B

07/13/2010

COC reference:

Shipping Date:

Time of receipt: 10 14

ASAD BHAIDU

Contact Name:	Je	nnifer Parker		Shipper:	_Ma	axxam co	urier	Airbill Number: NA			
Sampled By:	W	indward Environmental LLC		Form filled out by	: <u>J</u> e	nnifer Pa	rker/Dianne Janak	Turnarou	nd requested: Standard		
			T	T	т	oct(c) Poque	ested (check test(s) requ	ired)			
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)	sted (check test(s) regu	lict)			
9/1/2009	12:59	LPR1-MAWB-Ind138	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]		
9/4/2009	11:25	LPR2-MAWB-Ind158	1	Tissue	Х	Х					
9/7/2009	13:15	LPR8-MAWB-Comp32	1	Tissue	Х	X					
9/12/2009	9:35	LPR8-MAWB-Comp28	1	Tissue	X	X					
9/12/2009	9:35	LPR8-MAWB-Comp29	1	Tissue	Х	X					
9/15/2009	9:23	LPR4-MAWB-Comp14	1	Tissue	X	Х					
9/17/2009	9:52	LPR5-MAWB-Comp19	1	Tissue	X	X					
9/17/2009	10:04	LPR5-MAWB-Comp18	1	Tissue	X	Х					
9/18/2009	11:57	LPR5-MAWB-Comp23	1	Tissue	X	X					
9/18/2009	13:19	LPR4-MAWB-Comp15	1	Tissue	Х	X	<u> </u>				
	•	Total Number of Containers	10 of 20	Purchase Ord	ler / State	ment of V	Vork # MAX09_01LP	R			
1) Released by: Company: Date/Time: Company: Date/Time:	\$625 \$4625	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresponds Specimens were group Analytical. Alpha Analy therefore, samples are	NOTES Individual specimens were collected by Windward Environmental. The collection date and time corresponds to the earliest collected individual specimen within the composit Specimens were grouped together into composites by Windward onsite at Alpha Analytical. Alpha Analytical processed and homogenized the individuals and composite therefore, samples are released by Alpha Analytical. Sample names indicate whether the sample is an individual (Ind) or composite (Comp).			
	1/2/				· · · · · · · · · · · · · · · · · · ·		To be comple	ted by Lab	poratory upon sample receipt:		
	1 4	200 West M	ercer Street	Date of	receipt:: 2	0/0/0	7/15	Laboratory W	/.O. #:		

Condition upon receipt:

Cooler temperature: 3.1/1.8/2.9

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS TISSUE				То:	_IVI	axxam A	Analytics COC ref erence # LPR-MA-Pt						
Project Number:	_	Task 16.1 (09	.58.02.31)		Attn:	Mi	ke Challis	S		Shipping Date:	07/13/2010		
Contact Name:		Jennifer Parke	er		Shipper:	M	axxam co	urier		Airbill Number:	NA		
Sampled By:	_	Windward En	vironmental LLC		Form filled out by: Jennifer Par		rker/Diann	e Janak	Turnaround requ	ested: Standard			
				1	1.	 Т	est(s) Reque	ested (check t	est(s) required)		15-Jul-10 10:14 E CHALLIS		
						S2)	1						
,						cide: d - HRMS	PAHs (CARB 429 Mod)						
Sample				Pesti 9 Mo	ls (B 42)			ABH	93261 ENIV 221				
Collection Date (m/d/y)	Time	Samp	le Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PA (SA	(CAR		ADII	ENV-231		
8/11/2009	9:56	2:56 LPR3-MAFT-Comp02 1			Tissue	Х	Х			1	mments / Instructions [Jar tag number(s)]		
8/11/2009	10:08	LPR3-MAI	FT-Comp03	1	Tissue	X	Х						
8/12/2009	9:24	LPR3-MAI	FT-Comp04	1	Tissue	X	X						
8/13/2009	10:00	LPR3-MAI	FT-Comp05	1	Tissue	X	X						
8/13/2009	11:52	52 LPR3-MAFT-Comp07			Tissue	Х	Х						
8/13/2009	11:52	LPR3-MAI	FT-Comp08	1	Tissue	X	Х				· .		
8/14/2009	8:44	LPR3-MAI	-T-Comp13	1	Tissue	Х	Х				International Soli		
8/25/2009	7:30	LPR6-MAI	T-Comp24	1	Tissue	Х	X						
8/25/2009	9:54	LPR6-MAI	T-Ind122	1	Tissue	X	X				Sample Heat Treat Required		
9/1/2009	13:10	LPR1-MAI	FT-Comp01	1	Tissue	X	X				High Risk material		
1		Total Number	er of Containers	10 of 35	Purchase Ord	der / State	ment of V	Vork # MAX	09_01LPR		lled Storage and Disposal		
1) Released by:					3) Released by:			1	•		ironmental. The collection date ual specimen within the composite.		
SHOWA	1		Company:		Company:						Windward onsite at Alpha ed the individuals and composites;		
Date/Time:				Date/Time:			therefore,	amples are released	d by Alpha Analytical. Sa	ample names indicate whether the			
Rec'd by:			Rec'd by:			sample is a	n individual (Ind) or	r composite (Comp).					
Company: Company: Date/Time:			Company: Date/Time:										
	7 (To be	completed b	y Laboratory uj	oon sample receipt:		
200 West Mercer Street					Date of receipt:: 2010 / 0 7 115					Laboratory W.O. #:			

Condition upon receipt:

Cooler temperature: 3.1/1.8/2.9°C

Time of receipt: 10:14

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

2	of	2
4		_

Project/Client Name:

Project Number:

Passaic RI/FS Tissue

Task 16.1 (09.58.02.31)

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Attn:

Maxxam Analytics

Mike Challis

B093261

07/13/2010

COC reference:

Shipping Date:

Time of receipt: 10:14

LPR-MA-PERF-B

ASAD BHAID

Contact Name:	_Je	nnifer Pa	rker		Shipper:	Maxxam courier			Air	Airbill Number: NA		
Sampled By:	W	indward E	Environmental LLC	: :	Form filled out by	led out by: Jennifer Parker/Dianne Janak			ak Tu	rnaround requested: Standard		
							est(s) Requ	ested (check test(s) re	equired)			
Sample Collection Date (m/d/y)	Time	Sa	mple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)					
9/10/2009	8:38	LPR8-N	AFT-Comp26	1	Tissue	Х	Х			Comments / Instructions [lar tag number(s)]		
9/10/2009	9:30	LPR8-M	AFT-Comp31	1	Tiss∪e	Х	Х			(m. mg m. m., v)		
9/12/2009	9:35	LPR8-M	AFT-Comp27	1	Tissue	Х	Х					
9/18/2009	10:35	LPR5-M	AFT-Comp20	1	Tissue	X	Х					
9/18/2009	10:35	LPR5-M	IAFT-Comp21	1	Tissue	Х	Х					
9/18/2009	11:57	LPR5-M	AFT-Comp22	1	Tissue	Х	Х					
9/18/2009	13:50	LPR4-MAFT-Comp16		1	Tissue	Χ	X					
9/18/2009	14:10	LPR4-MAFT-Comp17		1	Tissue	Х	X					
9/2/2009	15:46	LPR1-M	AFT-Ind145	1	Tissue	X	X					
	·			****								
		Total Num	ber of Containers	9 of 19	Purchase Ord	er / State	ment of V	Vork # MAX09_01	LPR			
1) Released by: Company. Date/Time: Company: Date/Time:	// //625 //625 //5//		2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time correspond Specimens were gro Analytical. Alpha An	ds to the earliest on the couped together into alytical processed are released by Alp	y Windward Environmental. The collection date ollected individual specimen within the composite. o composites by Windward onsite at Alpha and homogenized the individuals and composites; tha Analytical. Sample names indicate whether the osite (Comp).		
7	/							To be comp	oleted by Lab	poratory upon sample receipt:		
			200 West Me Suite 401	ercer Street	Date of	receipt::	010/03	115	Laboratory W	/.O. #;		

Condition upon receipt:

Cooler temperature: 3.1/1.8/2.9°C

1	of	1
. •		

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Na	oject/Client Name: Passaic RI/FS Tissue			·	То:	M	axxam A	nalytics		COC reference # LPR-MA-RB6		
Project Number:	roject Number: 09.58.02.31 (Task 16.1)				Attn: Mike Challis			S	Shipping Date: 07/13/20			
Contact Name:		Jenr	nifer Park	er	·	Shipper:	М	axxam co	urier		— Airbill Numbe	er: NA
Sampled By:	_	Win	dward En	vironmental LLC		Form filled out by	∕: J∈	nnifer Pa	rker/Ellen	Collins	Turnaround r	equested: Standard
					7					***		
		-			,		T	est(s) Reque	sted (check t	test(s) required)		
Sample Collection Date (m/d/y)	Time		Samp	ole Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
07/13/10	8:1≤		LPR-0713	10-RB	2	Water	Х	Х				Comments / Instructions [Jar tag number(s)]
												[m. mg .m.ma.(-/,
			-									
				-								
			-									
		То	tal Numbe	er of Containers	2	Purchase Ord	der / State	ment of W	/ork # MA>	(09_01LPR		
1) Released by:	L		2	Released by:		3) Released by:			NOTES		-	
Morris	e/z/	-										
Company	Tus			Company:		Company:						
Date/Time:	- 11-ky		_	Date/Time:		Date/Time:						
Rec'd by	16	25		Rec'd by:		Rec'd by:						
	J (//										
Company:	MAS	, Chi	,	Company:		Company:						
Date/Time:	70110		0	Date/Time:		Date/Time:						
	6/13	//							T. !-		l ala a mat	
	, ,	/		200 West M	ercer Street				10 06	: completed b	y Laboratory	upon sample receipt:

Wind Ward environmental LLC

2010/04/10	Laboratory W.O. #:
	Received by: ASB SHATOL

of	f _4_	СНА	IN-OF	-CUSTO	DY/1	TEST I	REQUEST FOR	RM
Project/Client Na	ame: Pa	assaic RI/FS Tissue		То:	M	axxam A	nalytics	COC ref erence # LPR-MA-EELF-A
Project Number:		ask 16.1 (09.58.02.31)		Attn:	M	ike Challi	S	Shipping Date: 07/19/2010
Contact Name:	-	ennifer Parker		Shipper:	M	axxam co	ourier	Airbill Number: NA
Sampled By:		indward Environmental LLC		Form filled out by	r: Je	ennifer Pa	rker/Dianne Janak	Turnaround requested: Standard
						est(s) Reque	ested (check test(s) required)	= 21-Jul-10 11:40 - MIKE CHALLIS
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)		B096590 ABH FZ-13
8/11/2009	8:00	LPR3-ARFT-Comp20	1	Tissue	Х	X		Comments / Instructions [lar tag number(s)]
8/11/2009	8:50	LPR3-ARFT-Comp06	1	Tissue	Х	X		
8/11/2009	9:13	LPR3-ARFT-Ind005	1	Tissue	X	X		
8/11/2009	11:08	LPR3-ARFT-Comp05	1	Tissue	X	X		
8/12/2009	9:00	LPR3-ARFT-Ind010	1	Tissue	X	X		
8/12/2009	12:28	LPR3-ARFT-Ind014	1	Tissue	X	X		
8/18/2009	8:05	LPR5-ARFT-Comp09	1	Tissue	X	X	<u> </u>	International Sol
8/18/2009	8:15	LPR5-ARFT-Ind021	1	Tissue	X	X		- International Sol
8/18/2009	8:42	LPR4-ARFT-Ind022	1	Tissue	X	X		Sample Heat Treat Require
8/18/2009	12:30	LPR4-ARFT-Ind026	1	Tissue	X	X		
7		Total Number of Containers	10 of 32	Purchase Ore	der / State	ement of V	Work # MAX09_01LPR R	High Risk material Controlled Storage and Disposal
1) Released by:	4	2) Released by:		3) Released by:			NOTES Individual specimens were colle and time corresponds to the ea	ected by Windward Environmental. The collection date rrliest collected individual specimen within the composite.
Company (HA	Company:		Company:			1	her into composites by Windward onsite at Alpha cessed and homogenized the individuals and composites;
Date/Time:	1635	Date/Time:		Date/Time:			therefore, samples are released	by Alpha Analytical. Sample names indicate whether the
Recidible	1633	Rec'd by:		Rec'd by:			sample is an individual (Ind) or	composite (Comp).
Company: M	1/19/19	Company: Date/Time:		Company: Date/Time:				

Wind Ward environmental LLC

To be completed by Laboratory upon sample receipt:							
Date of receipt:: 2010/07/21	Laboratory W.O. #:						
	Time of receipt: 1) 40						
Cooler temperature: 6.4 7.8 8.1°C	Received by: ASAD BRADE						

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	То:	Maxxam Analytics	COC reference:	# LPR-MA-EELF-B
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Mike Challis	Shipping Date:	07/19/2010
Contact Name:	Jennifer Parker	Shipper:	Maxxam courier	Airbill Number:	NA
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround reque	sted: Standard

,					est(s) Reque	sted (check test(s) required)	
Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)			
10:43	LPR5-ARFT-Comp12	1	Tissue	Х	Х			Comments / Instructions [Jar tag number(s)]
10:51	LPR5-ARFT-Ind030	1	Tissue	Х	Х			
12:44	LPR4-ARFT-Comp07	1	Tissue	Х	X			
12:44	LPR4-ARFT-Ind034	1	Tissue	Χ	X			
11:59	LPR5-ARFT-Comp10	1	Tissue	Х	X			
12:25	LPR5-ARFT-Ind040	1	Tissue	X	X			
13:39	LPR4-ARFT-Comp08	1	Tissue	Х	X			
14:42	LPR4-ARFT-Ind044	1	Tissue	X	Х			
11:56	LPR5-ARFT-Ind049	1	Tissue	X	X			
12:09	LPR5-ARFT-Ind048	1	Tissue	X	X			
1	Total Number of Containers	10 of 32	Purchase Order / Statement of Work # MAX09_01LPR					
2) Released by: Company: Date/Time: Company: Date/Time: Company: Date/Time: Company: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:						and time corre Specimens wer Analytical. Alph therefore, sam	sponds to the earliest on the grouped together in the Analytical processed to be are released by Al	by Windward Environmental. The collection date collected individual specimen within the composite. to composites by Windward onsite at Alpha I and homogenized the individuals and composites; pha Analytical. Sample names indicate whether the osite (Comp).
	10:43 10:51 12:44 12:44 11:59 12:25 13:39 14:42 11:56 12:09	10:43 LPR5-ARFT-Comp12 10:51 LPR5-ARFT-Ind030 12:44 LPR4-ARFT-Comp07 12:44 LPR4-ARFT-Ind034 11:59 LPR5-ARFT-Comp10 12:25 LPR5-ARFT-Ind040 13:39 LPR4-ARFT-Comp08 14:42 LPR4-ARFT-Ind044 11:56 LPR5-ARFT-Ind049 12:09 LPR5-ARFT-Ind049 12:09 LPR5-ARFT-Ind048 Total Number of Containers 2) Released by: Company: Date/Time:	Time Sample Identification Containers 10:43 LPR5-ARFT-Comp12 1 10:51 LPR5-ARFT-Ind030 1 12:44 LPR4-ARFT-Comp07 1 12:44 LPR4-ARFT-Ind034 1 11:59 LPR5-ARFT-Comp10 1 12:25 LPR5-ARFT-Ind040 1 13:39 LPR4-ARFT-Comp08 1 14:42 LPR4-ARFT-Ind044 1 11:56 LPR5-ARFT-Ind049 1 12:09 LPR5-ARFT-Ind048 1 Total Number of Containers 10 of 32 2) Released by: Company: Date/Time: Date/Time:	Time Sample Identification Containers Matrix 10:43 LPR5-ARFT-Comp12 1 Tissue 10:51 LPR5-ARFT-Ind030 1 Tissue 12:44 LPR4-ARFT-Comp07 1 Tissue 12:44 LPR4-ARFT-Ind034 1 Tissue 11:59 LPR5-ARFT-Comp10 1 Tissue 12:25 LPR5-ARFT-Ind040 1 Tissue 13:39 LPR4-ARFT-Comp08 1 Tissue 14:42 LPR4-ARFT-Ind044 1 Tissue 11:56 LPR5-ARFT-Ind049 1 Tissue 12:09 LPR5-ARFT-Ind048 1 Tissue Total Number of Containers 10 of 32 Purchase Ord 2) Released by: 3) Released by: Company: Date/Time:	Time Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification Sample Identification X 10:51	Time Sample Identification # of Containers Matrix Sp j. bow 6 GS v. Y & Y & Y & Y & Y & Y & Y & Y & Y & Y	# of Containers	10:43

	/
Wi	nd Ward environmental LLC

Cooler temperature: 6.417.8/8.1°	Received by: John ASAD BHAZE
Condition upon receipt:	Time of receipt: // .'4
Date of receipt:: 2010 04 21	Laboratory W.O. #:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Passaic RI/FS Tissue	To:	Maxxam Analytics	COC reference:	# LPR-MA-EELF-C
Project Number:	Task 16.1 (09.58.02.31)	Attn:	Mike Challis	Shipping Date:	07/19/2010
Contact Name:	Jennifer Parker	Shipper:	Maxxam courier	Airbill Number:	NA
Sampled By:	Windward Environmental LLC	Form filled out by:	Jennifer Parker/Dianne Janak	Turnaround requested: Standard	

						sted (check t	est(s) require	ed) T	4	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
8/25/2009	9:25	LPR6-ARFT-Ind065	1	Tissue	Х	X				Comments / Instructions [lar tag number(s)]
8/27/2009	11:08	LPR7-ARFT-Ind071	1	Tissue	Х	X				tan mg mana (1)
8/29/2009	8:27	LPR6-ARFT-Ind073	1	Tissue	Х	Χ			·	
9/1/2009	12:55	LPR1-ARFT-Comp01	1	Tissue	Х	Χ				
9/2/2009	15:29	LPR1-ARFT-Comp02	1	Tissue	Х	Χ				
9/5/2009	15:15	LPR5-ARFT-Ind086	1	Tissue	Х	X				
9/8/2009	12:32	LPR8-ARFT-Comp17	1	Tissue	X	X				
9/8/2009	13:15	LPR8-ARFT-Comp21	1	Tissue	Х	X		******		
9/8/2009	13:15	LPR8-ARFT-Comp22	1	Tissue	Х	X				
9/9/2009	8:25	LPR8-ARFT-Comp14	1	Tissue	Х	X				
	1	Total Number of Containers	10 of 32	Purchase Order / Statement of Work # MAX09_01LPR						
Company: Company: Company: Company: Company: Company: Date/Time:	Company: Date/Time: Date/Time: Rec'd by: Company: Company: Company: Company: Company: Company: Company: Company: Company: Company:					and time co Specimens Analytical. A therefore, s	orresponds to were grouped Alpha Analytic	the earliest co together into al processed a eased by Alph	Windward Environmental. The collection date blected individual specimen within the composite. It composites by Windward onsite at Alpha and homogenized the individuals and composites; ha Analytical. Sample names indicate whether the site (Comp).	

Wind Ward environmental LLC

To be con	mpleted by Laboratory upon sample receipt:							
Date of receipt:: 2 - 16 0 - 2 2	Laboratory W.O. #:							
Condition upon receipt:	Time of receipt: 11 140							
Cooler temperature: 6 . 4 / 7 . 8 / 8 . 1 ° °	Received by Jonella ASAD BHATO							

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name: Passaic RI/FS Tissue				-	M	axxam A	nalytics		COC reference: # LPR-AP-MALF-D				
Project Number:			(09.58.02.31)		Attn:	Mike Challis				Shipping Date: 07/19/2010			
Contact Name:	-	ennifer Pa			Shipper:		Maxxam courier				bill Number:	NA	
Sampled By:		Windward Environmental LLC			Form filled out by:		Jennifer Parker/Dianne Janak			 Tur	Turnaround requested: Standard		
Sampled by.		VIII GWAI G											
							est(s) Reque	ested (check t	test(s) require	d)			
Sample Collection Date (m/d/y)	Time	Sa	ample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)						
9/2/2009	14:59	LPR2-A	ARFT-Comp04	1	Tissue	Х	X					nments / Instructions Jar tag number(s)]	
9/5/2009	12:03		ARFT-Ind085	1	Tissue	Х	Х						
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,													
	-												
	L	Total Nur	mber of Containers	2 of 32	Purchase Or	der / State	ement of V	Vork # MA	X09_01LPR				
1) Released by: Lompany Pate/Time: Company Date/Time:	1655 1655 14xxx	1/10	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time of Specimen Analytical therefore,	corresponds to s were grouped . Alpha Analytic	the earliest on I together int al processed Ieased by Alp	ollected individu o composites by and homogeniz oha Analytical. Sa	ronmental. The collection date al specimen within the composite. Windward onsite at Alpha ed the individuals and composites; mple names indicate whether the	
L	41-4	_						To be	e complete	ed by Lal	oratory ur	oon sample receipt:	
	1		200 Wost M	orcor Street				1		<i>y</i> =	- /		



Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

Cooler temperature: 6.4/3.8/8.1°C	Received by January ASAD Brook
	Time of receipt: 111,40
Date of receipt:: 2010/07/21	Laboratory W.O. #:

of	f <u>3</u>	CHA	IN-OF-	CUSTO	DY/T	EST	REQUEST FOR	RM		
Project/Client Name: Passaic RI/FS Tissue				То:	M	axxam A	nalytics	COC ref erence # LPR-MA-EELWB-A		
Project Number:		Attn:		ike Challi		Shipping Date:	07/19/2010			
Project Number: Task 16.1 (09.58.02.31) Contact Name: Jennifer Parker				Shipper:	M	axxam co	urier	— Airbill Number:	NA	
Sampled By: Windward Environmental LLC				Form filled out by	r: Je	nnifer Pa	rker/Dianne Janak	Turnaround requ	uested: Standard	
					Т	est(s) Reque	ested (check test(s) required)	-	21-Jul-10 11:40 IKE CHALLIS	
Sample Collection Date (m/d/y)	Time	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)		 I A	B096602 BH FZ-13	
9/2/2009	14:59	LPR2-ARCT-Comp04	1	Tissue	X	X			[lar tag number(s)]	
9/5/2009	12:03	LPR1-ARCT-Ind085	1	Tissue	X	X				
8/11/2009	7:46	LPR3-ARWB-Ind001	1 1	Tissue	Х	X				
8/11/2009	11:30	LPR3-ARWB-Ind009	1	Tissue	X	X				
8/12/2009	11:36	LPR3-ARWB-Ind012	1	Tissue	X	X				
8/18/2009	11:28	LPR4-ARWB-Ind024	1	Tissue	Х	X				
8/18/2009	12:39	LPR4-ARWB-Ind025	1	Tissue	Х	X		. A I	nternational Solid	
8/20/2009	12:30	LPR5-ARWB-Ind039	1	Tissue	X	X			Sample	
8/20/2009	14:42	LPR4-ARWB-Ind043	1	Tissue	Х	X			Heat Treat Required	
8/21/2009	11:50	LPR5-ARWB-Comp11	1	Tissue	X	X			h Risk material	
		Total Number of Containers	10 of 21	Purchase Or	der / State	ment of V	Vork # MAX09_01LPR R		Storage and Disnosal	
1) Released by: company of the party of the	1655	2) Released by: Company: Date/Time: Rec'd by:		3) Released by: Company: Date/Time: Rec'd by:			and time corresponds to the ea Specimens were grouped toge Analytical. Alpha Analytical pro	arliest collected indivion ther into composites b coessed and homogening by Alpha Analytical. S	ovironmental. The collection date dual specimen within the composite by Windward onsite at Alpha ized the individuals and composites Sample names indicate whether the	
Company: Date/Time:	14 XXX	Company: Date/Time:		Company: Date/Time:						

Wind Ward environmental LLC

200 West Mercer Street
Suite 401
Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343

Cooler temperature: 6.4/7-8/8.1c	Received by: Jose Len
Condition upon receipt:	Time of receipt: // /4-0
Date of receipt:: 2010/03/21	Laboratory W.O. #:

To be completed by Laboratory upon sample receipt:

	_£	
2	OI	2
_	•	J

Suite 401

Seattle, WA 98119

Tel: (206) 378-1364

Fax: (206) 217-9343

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Time of receipt:

Received by:

Project/Client Name: Passaic RI/FS Tissue						Го:	M	axxam Ar	nalytics		COC reference:	# LPR-MA-EELWB-B
Project Number:	_	Tas	sk 16.1 (0	09.58.02.31)		Attn: Mi					Shipping Date:	07/19/2010
Contact Name:	_	Jen	nifer Par	ker		Shipper:	N	axxam col	urier		Airbill Number:	NA
Sampled By:	-	Wir	ndward E	invironmental LLC	F	orm filled out by:	J	ennifer Par	ker/Dianne Ja	anak	- Turnaround requ	uested: Standard
	_						·					
							est(s) Reque	sted (check test(s) required)			
Sample Collection Date (m/d/y)	Time		Sar	nple Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
8/22/2009	8:17		LPR4-ARWB-Ind060		1	Tissue	X	Х			Co	omments / Instructions [Jar tag number(s)]
8/22/2009	9:22			LPR5-ARWB-Ind062		Tissue	X	X				tial ray humber(3)
8/27/2009	8:08		LPR7-ARWB-Ind070		1	Tissue	Х	X				
8/27/2009	8:47		LPR6-ARWB-Ind069		1	Tissue	X	Х				
8/29/2009	10:49	,	LPR6-ARWB-Ind074		1	Tissue	X	X				
9/3/2009	12:37	-	LPR1-ARWB-Comp03		1	Tissue	X	Х				
9/7/2009	14:00		LPR8-ARWB-Comp16		1	Tissue	X	Х				
9/8/2009	10:30			RWB-Comp15	1	Tissue	Х	Х				
9/8/2009	12:32	$\overline{}$		RWB-Comp18	1	Tissue	Х	Х				
9/9/2009	7:49		LPR8-A	RWB-Comp13	1	Tissue	Х	X				
	1.	T	otal Num	ber of Containers	10 of 21	Purchase Order / Statement of Work # MAX09_01LPR						
1) Released by: Company: Date/Time: Company: Date/Time:	16,55 VAXX 119/	10	97 1	2) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corres Specimens wer Analytical. Alph therefore, samp	sponds to the earl e grouped togeth a Analytical proce oles are released b	liest collected individ er into composites b essed and homogeni	vironmental. The collection date dual specimen within the composite. by Windward onsite at Alpha zed the individuals and composites; Sample names indicate whether the
	1								To be co	mpleted by	Laboratory u	pon sample receipt:
		/		200 West Me	ercer Street				1	1		

Condition upon receipt:

Cooler temperature: 6.4/7-8/8.12

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Project/Client Name:	Pass	saic RI/FS Tissue		То:	M	axxam A	nalytics	# LPR-MA-EELWB-C		
Project Number:	Task	(16.1 (09.58.02.31)		Attn: Mike Challis					Shipping Date:	07/19/2010
Contact Name:	Jenn	ifer Parker		Shipper: Maxxan			ourier	:	Airbill Number:	NA
Sampled By: Windward Environmental LLC				Form filled out by	r: Je	nnifer Pa	arker/Dianne Ja	ınak	Turnaround requested: Standard	
<u> </u>	<u> </u>		1	Τ	T					
					Т	est(s) Requ	ested (check test(s)	required)		
Sample Collection Date (m/d/y) Ti	me	Sample Identification	# of Containers	Matrix	OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
9/9/2009 11	:25 L	PR8-ARWB-Comp19	1	Tissue	Х	Х			Co	mments / Instructions
					7.11					[lar tag_number(s)]
	Tot	al Number of Containers	1of 21	Purchase Ord	er / Stater	nent of V	Vork # MAX09_0)1LPR		
1) Released by: Company: Bec'd by: Company: Date/Time:	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	2) Released by: Company: Date/Time: Company: Date/Time:		3) Released by: Company: Date/Time: Rec'd by: Company: Date/Time:			and time corresp Specimens were Analytical. Alpha therefore, sample	onds to the earl grouped togeth Analytical process are released b	liest collected individu ner into composites by essed and homogeniz	ironmental. The collection date ual specimen within the composite. Windward onsite at Alpha ed the individuals and composites; ample names indicate whether the
	ι ,	000 44					To be con	pleted by	Laboratory up	oon sample receipt:
	/NTT	200 West Me 1 Suite 401	rcer Street	Date of a	receipt::			Laborato	ory W.O. #:	

Condition upon receipt: 20/0/03/71

Cooler temperature:

Time of receipt:

Received by:

Seattle, WA 98119

Tel: (206) 378-1364 Fax: (206) 217-9343 IMMEDIATE TEST

Passaic RI/FS Tissue

1	of	1
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Project/Client Name:

CHAIN-OF-CUSTODY/TEST REQUEST FORM

To:

Maxxam Analytics

Project Number:	Number: 09.58.02.31 (Task 16.1)				Attn:	_Mi	ke Challis	s		Shipping Date	07/19/2010
Contact Name:	Jei	nnifer Par	ker		Shipper:	per: Maxxam courier				Airbill Number	: NA
Sampled By:	Wi	ndward E	nvironmental LLC		orm filled out by:	Je	nnifer Pa	rker/Ellen	Collins	Turnaround re	quested: Standard
<u> </u>	ī	T		T .	1						
						Te		ested (check t	test(s) required)	•	
						OC Pesticides (1699 Mod – NYSDEC HRMS-2)	PAHs (CARB 429 Mod)				
Sample						stici Mod C HR	429 1				
Collection				# of		C Pe 699 N	AHs ARB				
Date (m/d/y)	Time	San	nple Identification	Containers	Matrix	O đ ž	9.0				
7/19/2010	12:30	LPR-071	910-RB	2	Water	X	Х			<u></u>	Comments / Instructions [lar tag number(s)]
										4	
				·							
	7	otal Num	ber of Containers	2	Purchase Order / Statement of Work # MAX09_01LPR						
1) Released by:	l)		2) Released by:		3) Released by:			NOTES			
1 Mines	ff-										
Company:	A		Company:		Company:						
Date/Time:	10		Date/Time:		Date/Time:						
Rec'd by:	1655	-	Rec'd by:		Rec'd by:						
4								-			
Company: 🟃	HEXAL	1	Company:		Company:						
Date/Time:	7/19/1	,	Date/Time:		Date/Time:						
<u> </u>	1 1							To be	completed	by Laboratory	upon sample receipt:
	1		200 West M	ercer Street				,			1



200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

	Received by: 2 Zerta ZOFIA ZEN
Condition upon receipt:	Time of receipt: 1(: 58
Date of receipt:: 2010 (07/2/	Laboratory W.O. #:
,	

LPR-MA-RB7

COC reference

APPENDIX D. SAMPLES AND ANALYSES BY ANALYTICAL LABORATORY AND SAMPLE DELIVERY GROUP

2009 Fish and Blue Crab Tissue Chemistry Data for the LPRSA Appendix D

Table D-1. 2009 SDGs, sample IDs, and analyses - Alpha Analytical FINAL

Species	Tissue Type	LPR ID
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp37
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp38
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp31
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp41
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp42
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp44
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp45
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp46
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp49
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp53
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp61
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp48
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp54
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp50
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp55
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp56
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp57
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp01
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp02
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp03
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp04
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp58
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp06
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp07
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp11
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp30
Rinsate Blank	Mussla/banatananaraa	LPR-032310-RB
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp13
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp14
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp17
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp15
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp18
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp19
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp20
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp24
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp34
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp26
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp32
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp33
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp27

Blue Crab Muscle/hepatopancreas LPR5-CSMH-Comp35 Rinsate Blank LPR-041210-RB Blue Crab Carcass LPR4-CSCT-Comp31 Blue Crab Carcass LPR1-CSCT-Comp01 Blue Crab Carcass LPR1-CSCT-Comp02 Blue Crab Carcass LPR1-CSCT-Comp03 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR1-CSCT-Comp30 Blue Crab Carcass LPR4-CSCT-Comp30 Blue Crab Carcass LPR4-CSCT-Comp30 Blue Crab Carcass LPR4-CSCT-Comp31	3
Blue Crab Carcass LPR4-CSCT-Comp31 Blue Crab Carcass LPR1-CSCT-Comp01 Blue Crab Carcass LPR1-CSCT-Comp02 Blue Crab Carcass LPR1-CSCT-Comp03 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	5
Blue Crab Carcass LPR1-CSCT-Comp01 Blue Crab Carcass LPR1-CSCT-Comp02 Blue Crab Carcass LPR1-CSCT-Comp03 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR1-CSCT-Comp11	
Blue Crab Carcass LPR1-CSCT-Comp01 Blue Crab Carcass LPR1-CSCT-Comp02 Blue Crab Carcass LPR1-CSCT-Comp03 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	
Blue Crab Carcass LPR1-CSCT-Comp03 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	
Blue Crab Carcass LPR1-CSCT-Comp03 Blue Crab Carcass LPR1-CSCT-Comp04 Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	<u> </u>
Blue Crab Carcass LPR1-CSCT-Comp06 Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	3
Blue Crab Carcass LPR1-CSCT-Comp07 Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	ļ
Blue Crab Carcass LPR1-CSCT-Comp11 Blue Crab Carcass LPR4-CSCT-Comp30	3
Blue Crab Carcass LPR4-CSCT-Comp30	7
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Blue Crah Carcass LPR1-CSCT-Comp13)
	3
Blue Crab Carcass LPR2-CSCT-Comp14	ļ
Blue Crab Carcass LPR2-CSCT-Comp17	7
Blue Crab Carcass LPR2-CSCT-Comp15	5
Blue Crab Carcass LPR2-CSCT-Comp18	3
Blue Crab Carcass LPR2-CSCT-Comp19)
Blue Crab Carcass LPR2-CSCT-Comp20)
Blue Crab Carcass LPR3-CSCT-Comp24	ļ
Blue Crab Carcass LPR5-CSCT-Comp34	ļ
Blue Crab Carcass LPR3-CSCT-Comp26	;
Blue Crab Carcass LPR4-CSCT-Comp32	<u> </u>
Blue Crab Carcass LPR4-CSCT-Comp33	3
Blue Crab Carcass LPR3-CSCT-Comp27	,
Blue Crab Carcass LPR3-CSCT-Comp28	3
Blue Crab Carcass LPR5-CSCT-Comp35	;
Blue Crab Muscle only LPR7-CSMT-Comp52	<u> </u>
Blue Crab Muscle only LPR1-CSMT-Comp08	3
Blue Crab Muscle only LPR1-CSMT-Comp10)
Blue Crab Muscle only LPR1-CSMT-Comp12	2
Blue Crab Muscle only LPR2-CSMT-Comp16	;
Blue Crab Muscle only LPR6-CSMT-Comp39)
Blue Crab Muscle only LPR2-CSMT-Comp22	2
Blue Crab Muscle only LPR2-CSMT-Comp23	3
Blue Crab Muscle only LPR6-CSMT-Comp40)
Blue Crab Muscle only LPR3-CSMT-Comp25	5
Blue Crab Muscle only LPR6-CSMT-Comp43	3
Blue Crab Muscle only LPR3-CSMT-Comp29)
Blue Crab Muscle only LPR5-CSMT-Comp36	;
Blue Crab Muscle only LPR7-CSMT-Comp47	7
Blue Crab Muscle only LPR7-CSMT-Comp51	
Blue Crab Muscle only LPR8-CSMT-Comp59	
Blue Crab Muscle only LPR8-CSMT-Comp60	
Blue Crab Muscle only LPR8-CSMT-Comp62	
Blue Crab Muscle only LPR1-CSMT-Comp05	
Blue Crab Muscle only LPR1-CSMT-Comp09)

Blue Crab	Muscle only	LPR2-CSMT-Comp21
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp63
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp09
Blue Crab	Hepatopancreas only	LPR3-CSHT-Comp64
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp21
Blue Crab	Hepatopancreas only	LPRX-CSHT-Comp65
Blue Crab	Hepatopancreas only	LPR8-CSHT-Comp66
Northern pike	Fillet (with skin)	LPR6-ELFT-Ind001
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Comp01
Largemouth bass	Fillet (with skin)	LPR8-MSFT-Ind002
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Ind009
Smallmouth bass	Fillet (with skin)	LPR4-MDFT-Comp01
Smallmouth bass	Fillet (with skin)	LPR5-MDFT-Comp02
Smallmouth bass	Fillet (with skin)	LPR8-MDFT-Comp03
Northern pike	Carcass	LPR6-ELCT-Ind001
Largemouth bass	Carcass	LPR5-MSCT-Comp01
Largemouth bass	Carcass	LPR8-MSCT-Ind002
Largemouth bass	Carcass	LPR5-MSCT-Ind002
Smallmouth bass	Carcass	LPR4-MDCT-Comp01
Smallmouth bass	Carcass	LPR5-MDCT-Comp02
Smallmouth bass	Carcass	LPR8-MDCT-Comp03
Rinsate Blank	Carcass	LPR-060810-RB
Kilisale Dialik		LFN-000010-ND
Carp	Whole body	LPR3-CCWB-Ind002
Carp	Whole body	LPR3-CCWB-Ind005
Carp	Whole body	LPR5-CCWB-Ind011
Carp	Whole body	LPR6-CCWB-Ind021
Carp	Whole body	LPR6-CCWB-Ind028
Carp	Whole body	LPR7-CCWB-Ind042
Carp	Whole body	LPR7-CCWB-Ind069
Carp	Whole body	LPR8-CCWB-Ind139
Carp	Whole body	LPR8-CCWB-Ind147
Carp	Whole body	LPR5-CCWB-Ind160
Carp	Whole body	LPR4-CCWB-Ind175
Carp	Whole body	LPR4-CCWB-Ind186
Brown Bullhead	Whole body	LPR3-ANWB-Ind001
Brown Bullhead	Whole body	LPR6-ANWB-Ind004
Brown Bullhead	Whole body	LPR4-ANWB-Ind007
Brown Bullhead	Whole body	LPR6-ANWB-Ind003
Brown Bullhead	Whole body	LPR6-ANWB-Ind005
Brown Bullhead	Whole body	LPR7-ANWB-Ind006
Rinsate Blank	,	LPR-062910-RB
Carp	Fillet (with skin)	LPR3-CCFT-Ind001
Carp	Fillet (with skin)	LPR3-CCFT-Ind004
Carp	Fillet (with skin)	LPR6-CCFT-Ind032

Carp	Fillet (with skin)	LPR7-CCFT-Ind068
Carp	Fillet (with skin)	LPR7-CCFT-Ind092
Carp	Fillet (with skin)	LPR6-CCFT-Ind104
Carp	Fillet (with skin)	LPR8-CCFT-Ind121
Carp	Fillet (with skin)	LPR8-CCFT-Ind131
Carp	Fillet (with skin)	LPR4-CCFT-Ind155
Carp	Fillet (with skin)	LPR4-CCFT-Ind156
Carp	Fillet (with skin)	LPR5-CCFT-Ind181
Carp	Fillet (with skin)	LPR5-CCFT-Ind184
Rinsate Blank	, ,	LPR-061510-RB
White sucker	Fillet (with skin)	LPR8-WSFT-Ind009
White sucker	Fillet (with skin)	LPR8-WSFT-Ind013
White sucker	Fillet (with skin)	LPR5-WSFT-Ind019
White sucker	Fillet (with skin)	LPR5-WSFT-Ind020
White sucker	Fillet (with skin)	LPR4-WSFT-Ind023
Channel catfish	Fillet (skinless)	LPR5-IPFT-Ind001
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind003
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind004
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind005
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind006
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind008
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind009
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind010
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind011
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind012
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind013
White catfish	Fillet (skinless)	LPR3-ACFT-Ind001
White catfish	Fillet (skinless)	LPR3-ACFT-Ind002
White catfish	Fillet (skinless)	LPR3-ACFT-Ind003
White catfish	Fillet (skinless)	LPR3-ACFT-Ind005
White catfish	Fillet (skinless)	LPR5-ACFT-Ind006
White catfish	Fillet (skinless)	LPR6-ACFT-Ind008
White catfish	Fillet (skinless)	LPR6-ACFT-Ind009
White catfish	Fillet (skinless)	LPR6-ACFT-Ind010
White catfish	Fillet (skinless)	LPR6-ACFT-Ind013
White catfish	Fillet (skinless)	LPR7-ACFT-Ind014
White catfish	Fillet (skinless)	LPR6-ACFT-Ind016
White catfish	Fillet (skinless)	LPR7-ACFT-Ind017
White catfish	Fillet (skinless)	LPR2-ACFT-Ind018
White catfish	Fillet (skinless)	LPR8-ACFT-Ind019
White catfish	Fillet (skinless)	LPR8-ACFT-Ind020
White catfish	Fillet (skinless)	LPR8-ACFT-Ind021
White catfish	Fillet (skinless)	LPR8-ACFT-Ind022
White catfish	Fillet (skinless)	LPR4-ACFT-Ind023
White catfish	Fillet (skinless)	LPR5-ACFT-Ind024
White sucker	Carcass	LPR8-WSCT-Ind009
White sucker	Carcass	LPR8-WSCT-Ind013
Willia Gaolloi	Jaioass	Li ito woo i ilidolo

White sucker	Carcass	LPR5-WSCT-Ind019
White sucker	Carcass	LPR5-WSCT-Ind020
White sucker	Carcass	LPR4-WSCT-Ind023
Channel catfish	Carcass	LPR5-IPCT-Ind001
Channel catfish	Carcass	LPR6-IPCT-Ind003
Channel catfish	Carcass	LPR6-IPCT-Ind004
Channel catfish	Carcass	LPR7-IPCT-Ind005
Channel catfish	Carcass	LPR7-IPCT-Ind006
Channel catfish	Carcass	LPR8-IPCT-Ind008
Channel catfish	Carcass	LPR8-IPCT-Ind009
Channel catfish	Carcass	LPR8-IPCT-Ind010
Channel catfish	Carcass	LPR8-IPCT-Ind011
Channel catfish	Carcass	LPR8-IPCT-Ind012
Channel catfish	Carcass	LPR8-IPCT-Ind013
White catfish	Carcass	LPR3-ACCT-Ind001
White catfish	Carcass	LPR3-ACCT-Ind002
White catfish	Carcass	LPR3-ACCT-Ind003
White catfish	Carcass	LPR3-ACCT-Ind005
White catfish	Carcass	LPR5-ACCT-Ind006
White catfish	Carcass	LPR6-ACCT-Ind008
White catfish	Carcass	LPR6-ACCT-Ind009
White catfish	Carcass	LPR6-ACCT-Ind010
White catfish	Carcass	LPR6-ACCT-Ind013
White catfish	Carcass	LPR7-ACCT-Ind014
White catfish	Carcass	LPR6-ACCT-Ind016
White catfish	Carcass	LPR7-ACCT-Ind017
White catfish	Carcass	LPR2-ACCT-Ind018
White catfish	Carcass	LPR8-ACCT-Ind019
White catfish	Carcass	LPR8-ACCT-Ind020
White catfish	Carcass	LPR8-ACCT-Ind021
White catfish	Carcass	LPR8-ACCT-Ind022
White catfish	Carcass	LPR4-ACCT-Ind023
White catfish	Carcass	LPR5-ACCT-Ind024
White perch	Carcass	LPR1-MACT-Ind145
White perch	Whole body	LPR3-MAWB-Comp06
White perch	Whole body	LPR3-MAWB-Comp09
White perch	Whole body	LPR3-MAWB-Comp10
White perch	Whole body	LPR3-MAWB-Comp11
White perch	Whole body	LPR3-MAWB-Comp12
White perch	Whole body	LPR3-MAWB-Comp30
White perch	Whole body	LPR7-MAWB-Ind123
White perch	Whole body	LPR7-MAWB-Comp25
White perch	Whole body	LPR6-MAWB-Ind128
White perch	Whole body	LPR1-MAWB-Ind138
White perch	Whole body	LPR2-MAWB-Ind158
White perch	Whole body	LPR8-MAWB-Comp32
White perch	Whole body	LPR8-MAWB-Comp28
White perch	Whole body	LPR8-MAWB-Comp29
	-	

White perch	Whole body	LPR4-MAWB-Comp14
White perch	Whole body	LPR5-MAWB-Comp19
White perch	Whole body	LPR5-MAWB-Comp18
White perch	Whole body	LPR5-MAWB-Comp23
White perch	Whole body	LPR4-MAWB-Comp15
Rinsate Blank	•	LPR-071310-RB
White perch	Fillet (with skin)	LPR3-MAFT-Comp02
White perch	Fillet (with skin)	LPR3-MAFT-Comp03
White perch	Fillet (with skin)	LPR3-MAFT-Comp04
White perch	Fillet (with skin)	LPR3-MAFT-Comp05
White perch	Fillet (with skin)	LPR3-MAFT-Comp07
White perch	Fillet (with skin)	LPR3-MAFT-Comp08
White perch	Fillet (with skin)	LPR3-MAFT-Comp13
White perch	Fillet (with skin)	LPR6-MAFT-Comp24
White perch	Fillet (with skin)	LPR6-MAFT-Ind122
White perch	Fillet (with skin)	LPR1-MAFT-Comp01
White perch	Fillet (with skin)	LPR8-MAFT-Comp26
White perch	Fillet (with skin)	LPR8-MAFT-Comp31
White perch	Fillet (with skin)	LPR8-MAFT-Comp27
White perch	Fillet (with skin)	LPR5-MAFT-Comp20
White perch	Fillet (with skin)	LPR5-MAFT-Comp21
White perch	Fillet (with skin)	LPR5-MAFT-Comp22
White perch	Fillet (with skin)	LPR4-MAFT-Comp16
White perch	Fillet (with skin)	LPR4-MAFT-Comp17
White perch	Fillet (with skin)	LPR1-MAFT-Ind145
American eel	Fillet (skinless)	LPR3-ARFT-Comp20
American eel	Fillet (skinless)	LPR3-ARFT-Comp06
American eel	Fillet (skinless)	LPR3-ARFT-Ind005
American eel	Fillet (skinless)	LPR3-ARFT-Comp05
American eel	Fillet (skinless)	LPR3-ARFT-Ind010
American eel	Fillet (skinless)	LPR3-ARFT-Ind014
American eel	Fillet (skinless)	LPR5-ARFT-Comp09
American eel	Fillet (skinless)	LPR5-ARFT-Ind021
American eel	Fillet (skinless)	LPR4-ARFT-Ind022
American eel	Fillet (skinless)	LPR4-ARFT-Ind026
American eel	Fillet (skinless)	LPR5-ARFT-Comp12
American eel	Fillet (skinless)	LPR5-ARFT-Ind030
American eel	Fillet (skinless)	LPR4-ARFT-Comp07
American eel	Fillet (skinless)	LPR4-ARFT-Ind034
American eel	Fillet (skinless)	LPR5-ARFT-Comp10
American eel	Fillet (skinless)	LPR5-ARFT-Ind040
American eel	Fillet (skinless)	LPR4-ARFT-Comp08
American eel	Fillet (skinless)	LPR4-ARFT-Ind044
American eel	Fillet (skinless)	LPR5-ARFT-Ind049
American eel	Fillet (skinless)	LPR5-ARFT-Ind048
American eel	Fillet (skinless)	LPR6-ARFT-Ind065
American eel	Fillet (skinless)	LPR7-ARFT-Ind071

American eel American eel American eel American eel American eel American eel American eel American eel American eel American eel American eel American eel American eel	Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless) Fillet (skinless)	LPR6-ARFT-Ind073 LPR1-ARFT-Comp01 LPR1-ARFT-Comp02 LPR5-ARFT-Ind086 LPR8-ARFT-Comp17 LPR8-ARFT-Comp21 LPR8-ARFT-Comp22 LPR8-ARFT-Comp14 LPR2-ARFT-Comp04 LPR1-ARFT-Ind085 LPR-071910-RB
American eel	Carcass	LPR2-ARCT-Comp04
American eel	Carcass	LPR1-ARCT-Ind085
American eel	Whole body	LPR3-ARWB-Ind001
American eel	Whole body	LPR3-ARWB-Ind009
American eel	Whole body	LPR3-ARWB-Ind012
American eel	Whole body	LPR4-ARWB-Ind024
American eel	Whole body	LPR4-ARWB-Ind025
American eel	Whole body	LPR5-ARWB-Ind039
American eel	Whole body	LPR4-ARWB-Ind043
American eel	Whole body	LPR5-ARWB-Comp11
American eel	Whole body	LPR4-ARWB-Ind060
American eel	Whole body	LPR5-ARWB-Ind062
American eel	Whole body	LPR7-ARWB-Ind070
American eel	Whole body	LPR6-ARWB-Ind069
American eel	Whole body	LPR6-ARWB-Ind074
American eel	Whole body	LPR1-ARWB-Comp03
American eel	Whole body	LPR8-ARWB-Comp16
American eel	Whole body	LPR8-ARWB-Comp15
American eel	Whole body	LPR8-ARWB-Comp18
American eel	Whole body	LPR8-ARWB-Comp13
American eel	Whole body	LPR8-ARWB-Comp19



			Percent		
		01/00	Moisture	PCB	Alkylated
SDG	Lab ID	SVOCs (8270C)	(SM2540G Mod)	Aroclors (8082)	PAHs (8270C)
L1003087	L1003087-01	X	х	X	X
L1003087	L1003087-02	X	X	x	x
L1003087	L1003087-03	x	X	х	x
L1003087	L1003087-04	x	X	х	x
L1003087	L1003087-05	x	X	х	x
L1003087	L1003087-06	X	X	X	X
L1003087	L1003087-07	x	X	X	x
L1003087	L1003087-08	x	X	X	x
L1003087	L1003087-09	x	X	X	x
L1003087	L1003087-10	x	X	X	x
L1003087	L1003087-11	X	X	X	X
L1003087	L1003087-12	X	X	X	X
L1003087	L1003087-13	X	X	X	X
L1003087	L1003087-14	X	X	X	X
L1003087	L1003087-15	x	X	X	x
L1003087	L1003087-16	x	X	X	x
L1003087	L1003087-17	X	X	X	X
L1003087	L1003087-18	X	X	X	X
L1003087	L1003087-19	X	X	X	X
L1003087	L1003087-20	X	X	X	X
L1003087	L1003087-21	X	X	X	X
L1003087	L1003087-22	X	X	X	X
L1003087	L1003087-23	X	X	X	X
L1003087	L1003087-24	X	X	X	X
L1003087	L1003087-25	X	X	X	X
L1003087	L1003087-26	X	X	X	X
L1003087	L1003087-27	X		X	X
L1003087	L1003087-28	X	X	X	X
L1003087	L1003087-29	X	X	X	X
L1003087	L1003087-30	X	X	X	X
L1003087	L1003087-31	X	X	X	X
L1003087	L1003087-32	X	X	X	X
L1003087	L1003087-33	X	X	X	X
L1003087	L1003087-34	X	X	X	X
L1003087	L1003087-35	Х	Χ	X	X
L1003087	L1003087-36	X	X	Χ	X
L1003087	L1003087-37	x	X	Χ	x
L1003087	L1003087-38	x	X	Χ	x
L1003087	L1003087-39	x	X	Χ	x
L1003087	L1003087-40	Х	Χ	X	Χ

L1003087	L1003087-41	X	X	X	Χ
L1003087	L1003087-42	X	X	X	Х
L1003087	L1003087-43	X		X	Х
L1003161	L1003161-01	X	X	X	Х
L1003161	L1003161-02	Х	X	X	Х
L1003161	L1003161-03	Х	X	X	Х
L1003161	L1003161-04	Х	X	X	Х
L1003161	L1003161-05	Х	X	X	Х
L1003161	L1003161-06	Х	X	X	Х
L1003161	L1003161-07	Х	X	X	Х
L1003161	L1003161-08	Х	X	X	Х
L1003161	L1003161-09	Х	X	X	Х
L1003161	L1003161-10	х	X	X	Х
L1003161	L1003161-11	х	X	X	Х
L1003161	L1003161-12	X	X	Χ	Х
L1003161	L1003161-13	X	X	X	X
L1003161	L1003161-14	X	X	X	X
L1003161	L1003161-15	X	X	X	X
L1003161	L1003161-16	X	X	X	X
L1003161	L1003161-17	X	X	X	Х
L1003161	L1003161-18	X	X	X	X
L1003161	L1003161-19	X	X	X	X
L1003161	L1003161-20	X	X	X	X
L1003161	L1003161-21	X	X	X	X
L1003161	L1003161-22	X	X	X	X
L1003161	L1003161-23	X	X	X	X
L1003161	L1003161-24	X	X	X	X
L1000101	L1000101-2 4	^	^	^	^
L1003164	L1003164-01	X	X	X	Х
L1003164	L1003164-02	X	X	X	X
L1003164	L1003164-03	X	X	X	X
L1003164	L1003164-04	X	X	X	X
L1003164	L1003164-05	X	X	X	X
L1003164	L1003164-06	X	X	X	X
L1003164	L1003164-07	X	X	X	X
L1003164	L1003164-07	X	X	X	
L1003164	L1003164-09	X			X
L1003164	L1003164-09		X	X	X
L1003164	L1003164-10	X	X	X	X
L1003164	L1003164-11 L1003164-12	X	X	X	X
L1003164		X	X	X	X
	L1003164-13	X	X	X	X
L1003164	L1003164-14	X	X	X	X
L1003164	L1003164-15	X	X	X	X
L1003164	L1003164-16	X	X	X	X
L1003164	L1003164-17	X	X	X	X
L1003164	L1003164-18	X	X	X	X
L1003164	L1003164-19	X	X	X	X
L1003164	L1003164-20	X	X	X	Х

L1003164	L1003164-21	X	x	x	X
L1004936	L1004936-01	Х	Х	Х	Х
L1004936	L1004936-02	X	X	X	X
L1004936	L1004936-02	X	X	X	X
L1004936	L1004936-04	X	X	X	
L1004936	L1004936-05	X	X	X	X X
L1004936	L1004936-06	X	X	X	X
L1004936	L1004936-07	X	X	X	X
L1004930	L1004930-07	X	X	X	Х
L1007321	L1007321-01	X	X	X	Х
L1007321	L1007321-02	X	X	X	Х
L1007321	L1007321-03	X	X	X	Х
L1007321	L1007321-04	X	X	X	Х
L1007321	L1007321-05	x	X	X	Х
L1007321	L1007321-06	x	X	X	Х
L1007321	L1007321-07	x	X	X	Х
L1007321	L1007321-08	x	X	X	Х
L1007321	L1007321-09	X	X	X	Х
L1007321	L1007321-10	X	X	X	Х
L1007321	L1007321-11	Х	X	Х	Х
L1007321	L1007321-12	X	X	X	X
L1007321	L1007321-13	X	X	X	X
L1007321	L1007321-14	X	X	X	X
L1007321	L1007321-15	X	^	X	X
21007021	21007021 10	χ		^	^
	1 4007044 04			.,	.,
I 1007344	1 100/344-01	X	X	X	X
L1007344 L1007344	L1007344-01 L1007344-02	X x	X X	X X	X X
L1007344	L1007344-02	X	X	X	Х
L1007344 L1007344	L1007344-02 L1007344-03	X X	x x	x x	X X
L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04	x x x	X X X	X X X	X X X
L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05	x x x x	x x x	x x x	x x x x
L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06	x x x x	x x x x	x x x x	x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-07	x x x x x	x x x x x	x x x x x	x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-07 L1007344-08	x x x x x x	x x x x x x	x x x x x x	x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-07 L1007344-08 L1007344-09	x x x x x x	x x x x x x	x x x x x x	x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-07 L1007344-08 L1007344-09 L1007344-10	x x x x x x x	x x x x x x x	x x x x x x x	x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-07 L1007344-08 L1007344-10 L1007344-10	x x x x x x x x	x x x x x x x x	x x x x x x x x	x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12	x x x x x x x x	x x x x x x x x	x x x x x x x x x	x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-07 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13	x x x x x x x x x	x x x x x x x x x	x x x x x x x x x	x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-07 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14	x x x x x x x x x	x x x x x x x x x	x x x x x x x x x	x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14	x x x x x x x x x x	x x x x x x x x x x	x x x x x x x x x x	x x x x x x x x x x x
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L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14 L1007344-15 L1007344-16 L1007344-16	x x x x x x x x x x x	x x x x x x x x x x x	x x x x x x x x x x x x	x x x x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14 L1007344-15 L1007344-16 L1007344-17 L1007344-17	x x x x x x x x x x x x	x x x x x x x x x x	x x x x x x x x x x x x	x x x x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14 L1007344-15 L1007344-16 L1007344-16	x x x x x x x x x x x	x x x x x x x x x x x	x x x x x x x x x x x x	x x x x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14 L1007344-15 L1007344-16 L1007344-17 L1007344-17	x x x x x x x x x x x x	x x x x x x x x x x x	x x x x x x x x x x x x	x x x x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14 L1007344-15 L1007344-16 L1007344-17 L1007344-17 L1007344-18 L1007344-19	x x x x x x x x x x x x	x x x x x x x x x x x	x x x x x x x x x x x x	x x x x x x x x x x x x x x
L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344 L1007344	L1007344-02 L1007344-03 L1007344-04 L1007344-05 L1007344-06 L1007344-08 L1007344-09 L1007344-10 L1007344-11 L1007344-12 L1007344-13 L1007344-14 L1007344-15 L1007344-16 L1007344-17 L1007344-18 L1007344-19	x x x x x x x x x x x x x	x x x x x x x x x x x	x x x x x x x x x x x x x	x x x x x x x x x x x x x x x

L1007346	L1007346-04	X	X	X	Х
L1007346	L1007346-05	X	X	X	Х
L1007346	L1007346-06	X	X	X	Х
L1007346	L1007346-07	X	X	X	Х
L1007346	L1007346-08	X	X	Х	Х
L1007346	L1007346-09	X	X	Х	Х
L1007346	L1007346-10	X	X	Х	Х
L1007346	L1007346-11	x	X	х	Х
L1007346	L1007346-12	X	X	х	Х
L1007346	L1007346-13	Χ		Х	Х
L1007319	L1007319-01	x	X	х	Х
L1007319	L1007319-02	Χ	X	Х	Х
L1007319	L1007319-03	Χ	X	Х	Х
L1007319	L1007319-04	X	X	X	X
L1007319	L1007319-05	X	X	X	X
L1007319	L1007319-06	X	X	X	X
L1007319	L1007319-07	X	X	X	X
L1007319	L1007319-08	X	X	X	X
L1007319	L1007319-09	X	X	X	X
L1007319	L1007319-10	X	X	X	X
L1007319	L1007319-11	X	X	X	X
L1007319	L1007319-11	X	X	X	X
L1007319 L1007319	L1007319-12	X	X	X	X
L1007319 L1007319	L1007319-13	X	X	X	X
L1007319 L1007319	L1007319-14	X	X		
L1007319 L1007319	L1007319-15 L1007319-16	X		X X	X
L1007319 L1007319	L1007319-10 L1007319-17		X		X
L1007319 L1007319	L1007319-17 L1007319-18	X	X	X	X
L1007319 L1007319	L1007319-16 L1007319-19	X	X	X	X
L1007319 L1007319	L1007319-19 L1007319-20	X	X	X	X
		X	X	X	X
L1007319	L1007319-21	X	X	X	X
L1007319	L1007319-22	X	X	X	X
L1007319	L1007319-23	X	X	X	X
L1007319	L1007319-24	X	X	X	X
L1007319	L1007319-25	X	X	X	X
L1007319	L1007319-26	X	X	X	X
L1007319	L1007319-27	Χ	X	X	Х
L1007319	L1007319-28	Χ	X	Х	Х
L1007319	L1007319-29	Х	X	Х	Х
L1007319	L1007319-30	X	X	Х	Х
L1007319	L1007319-31	Χ	X	X	Х
L1007319	L1007319-32	X	X	X	Х
L1007319	L1007319-33	X	X	X	Х
L1007319	L1007319-34	X	X	X	Х
L1007319	L1007319-35	Χ	X	X	Х
L1007320	L1007320-01	Χ	X	X	Χ
L1007320	L1007320-02	Χ	X	Χ	Х

L1007320	L1007320-03	X	X	X	Х
L1007320	L1007320-04	X	X	X	Х
L1007320	L1007320-05	X	X	X	Х
L1007320	L1007320-06	X	X	X	Х
L1007320	L1007320-07	X	X	X	Х
L1007320	L1007320-08	X	X	X	Х
L1007320	L1007320-09	X	X	Х	Х
L1007320	L1007320-10	X	X	Х	Х
L1007320	L1007320-11	X	X	Х	Х
L1007320	L1007320-12	X	X	х	Х
L1007320	L1007320-13	X	X	х	Х
L1007320	L1007320-14	X	X	Х	Х
L1007320	L1007320-15	X	X	х	Х
L1007320	L1007320-16	Х	X	х	Х
L1007320	L1007320-17	X	X	Х	Х
L1007320	L1007320-18	X	X	Х	Х
L1007320	L1007320-19	X	X	X	X
L1007320	L1007320-20	X	X	X	X
L1007320	L1007320-21	X	X	X	X
L1007320	L1007320-22	X	X	X	X
L1007320	L1007320-23	X	X	X	Х
L1007320	L1007320-24	X	X	X	X
L1007320	L1007320-25	X	X	X	X
L1007320	L1007320-26	X	X	X	Х
L1007320	L1007320-27	X	X	X	Х
L1007320	L1007320-28	X	X	X	X
L1007320	L1007320-29	X	X	X	X
L1007320	L1007320-30	X	X	X	X
L1007320	L1007320-31	X	X	X	X
L1007320	L1007320-32	X	X	X	X
L1007320	L1007320-33	X	X	X	X
L1007320	L1007320-34	X	X	X	X
L1007320 L1007320	L1007320-34 L1007320-35	X	X	X	X
L1007320	L 1007 320-33	^	^	^	^
L1009354	L1009354-01	X	X	X	Х
L1009354	L1009354-01	X	X	X	X
L1009354	L1009354-02	X	X	X	
L1009354	L1009354-04	X	X	X	X X
L1009354	L1009354-04 L1009354-05	X	X		
L1009354	L1009354-05 L1009354-06	X	X	X X	X
L1009354	L1009354-00 L1009354-07	X			X
L1009354	L1009354-07 L1009354-08	X	X X	X	X
L1009354 L1009354	L1009354-06 L1009354-09			X	X
L1009354 L1009354	L1009354-09 L1009354-10	X	X	X	X
		X	X	X	X
L1009354	L1009354-11	X	X	X	X
L1009354	L1009354-12	X	X	X	X
L1009354	L1009354-13	X	X	X	X
L1009354	L1009354-14	X	X	X	X
L1009354	L1009354-15	Χ	X	Х	Х

L1009354	L1009354-16	X	X	X	Χ
L1009354	L1009354-17	X	X	X	Χ
L1009354	L1009354-18	X	X	X	Χ
L1009354	L1009354-19	X	X	X	Х
L1009354	L1009354-20	X	X	X	Х
L1009354	L1009354-21	Х		X	Х
L1009360	L1009360-01	X	X	X	Х
L1009360	L1009360-02	X	X	X	Х
L1009360	L1009360-03	X	X	X	Х
L1009360	L1009360-04	X	X	X	Х
L1009360	L1009360-05	X	X	X	Х
L1009360	L1009360-06	X	X	X	X
L1009360	L1009360-07	X	X	X	X
L1009360	L1009360-07	X	X	X	
L1009360 L1009360	L1009360-08				X
		X	X	X	X
L1009360	L1009360-10	X	X	X	X
L1009360	L1009360-11	X	X	X	X
L1009360	L1009360-12	X	X	X	Х
L1009360	L1009360-13	X	X	X	Х
L1009360	L1009360-14	X	X	X	Χ
L1009360	L1009360-15	X	X	X	Χ
L1009360	L1009360-16	X	X	X	Χ
L1009360	L1009360-17	X	X	X	Χ
L1009360	L1009360-18	X	X	X	Χ
L1009360	L1009360-19	X	X	X	Χ
L1009361	L1009361-01	X	X	X	Χ
L1009361	L1009361-02	X	X	X	Χ
L1009361	L1009361-03	X	X	X	Х
L1009361	L1009361-04	X	X	X	Х
L1009361	L1009361-05	X	X	X	Х
L1009361	L1009361-06	X	X	X	Х
L1009361	L1009361-07	X	X	X	Х
L1009361	L1009361-08	X	x	X	Х
L1009361	L1009361-09	X	X	Χ	Х
L1009361	L1009361-10	X	X	Χ	Х
L1009361	L1009361-11	X	X	X	X
L1009361	L1009361-12	X	X	X	Х
L1009361	L1009361-14	X	X	X	Х
L1009361	L1009361-15	X	X	X	Х
L1009361	L1009361-16	X	X	X	X
L1009361	L1009361-17	X	X	X	X
L1009361	L1009361-17				
L1009361 L1009361	L1009361-16 L1009361-19	X X	X	X	X
L1009361 L1009361	L1009361-19 L1009361-20		X	X	X
		X	X	X	X
L1009361	L1009361-21	X	X	X	X
L1009361	L1009361-22	X	X	X	X
L1009361	L1009361-23	X	X	Χ	Х

L1009361	L1009361-24	Χ	X	X	X
L1009361	L1009361-25	X	X	X	X
L1009361	L1009361-26	X	X	X	X
L1009361	L1009361-27	X	X	X	X
L1009361	L1009361-28	X	X	X	X
L1009361	L1009361-29	X	X	X	X
L1009361	L1009361-30	X	X	X	X
L1009361	L1009361-31	X	X	X	X
L1009361	L1009361-32	X	X	X	X
L1009361	L1009361-33	X	X	X	X
L1009361	L1009361-34	X		X	X
L1009363	L1009363-01	X	X	X	X
L1009363	L1009363-02	X	X	X	X
L1009363	L1009363-03	X	X	X	X
L1009363	L1009363-04	X	X	X	X
L1009363	L1009363-05	X	X	X	X
L1009363	L1009363-06	X	X	Х	X
L1009363	L1009363-07	X	X	X	X
L1009363	L1009363-08	X	X	X	X
L1009363	L1009363-09	X	X	X	X
L1009363	L1009363-10	X	X	X	X
L1009363	L1009363-11	X	X	X	X
L1009363	L1009363-12	X	X	X	X
L1009363	L1009363-13	X	X	X	X
L1009363	L1009363-14	X	X	X	X
L1009363	L1009363-15	X	X	X	X
L1009363	L1009363-16	X	X	X	X
L1009363	L1009363-17	X	X	Х	X
L1009363	L1009363-18	X	X	X	X
L1009363	L1009363-19	X	X	Х	X
L1009363	L1009363-20	Χ	X	X	X
L1009363	L1009363-21	Χ	Χ	X	Χ

2009 Fish and Blue Crab Tissue Chemistry Data for the LPRSA Appendix D

Table D-2. 2009 SDGs, sample IDs, and analyses - Analytical Perspectives FINAL

Species	Tissue Type	LPR ID	SDG
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp37	P2102
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp38	P2102
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp31	P2102
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp41	P2102
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp42	P2102
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp44	P2102
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp45	P2102
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp46	P2102
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp49	P2102
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp53	P2102
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp04	P2102
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp61	P2103
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp48	P2103
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp54	P2103
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp50	P2103
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp55	P2103
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp56	P2103
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp57	P2103
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp01	P2103
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp02	P2103
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp03	P2103
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp58	P2135
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp06	P2135
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp07	P2135
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp11	P2135
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp30	P2135
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp13	P2135
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp14	P2135
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp17	P2135
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp15	P2135
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp18	P2135
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp19	P2140
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp20	P2140
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp24	P2140
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp34	P2140
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp26	P2140
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp32	P2140
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp33	P2140

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Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp27	P2140
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp28	P2140
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp35	P2140
Blue Crab	Carcass	LPR4-CSCT-Comp31	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp01	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp02	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp03	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp04	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp06	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp07	P2133
Blue Crab	_		P2133
	Carcass	LPR1-CSCT-Comp11	
Blue Crab	Carcass	LPR4-CSCT-Comp30	P2133
Blue Crab	Carcass	LPR1-CSCT-Comp13	P2133
Blue Crab	Carcass	LPR2-CSCT-Comp14	P2134
Blue Crab	Carcass	LPR2-CSCT-Comp17	P2134
Blue Crab	Carcass	LPR2-CSCT-Comp15	P2134
Blue Crab	Carcass	LPR2-CSCT-Comp18	P2134
Blue Crab	Carcass	LPR2-CSCT-Comp19	P2134
Blue Crab	Carcass	LPR2-CSCT-Comp20	P2134
Blue Crab	Carcass	LPR3-CSCT-Comp24	P2134
Blue Crab	Carcass	LPR5-CSCT-Comp34	P2134
Blue Crab	Carcass	LPR3-CSCT-Comp26	P2134
Blue Crab	Carcass	LPR4-CSCT-Comp32	P2134
Blue Crab	Carcass	LPR4-CSCT-Comp33	P2134
Blue Crab	Carcass	LPR3-CSCT-Comp27	P2134
Blue Crab	Carcass	•	P2134
_	-	LPR3-CSCT-Comp28	
Blue Crab	Carcass	LPR5-CSCT-Comp35	P2134
Blue Crab	Muscle only	LPR7-CSMT-Comp52	P2161
Blue Crab	Muscle only	LPR1-CSMT-Comp08	P2161
Blue Crab	Muscle only	LPR1-CSMT-Comp10	P2161
Blue Crab	Muscle only	LPR1-CSMT-Comp12	P2161
Blue Crab	Muscle only	LPR2-CSMT-Comp16	P2161
Blue Crab	Muscle only	LPR6-CSMT-Comp39	P2161
Blue Crab	Muscle only	LPR2-CSMT-Comp22	P2161
Blue Crab	Muscle only	LPR2-CSMT-Comp23	P2161
Blue Crab	Muscle only	LPR6-CSMT-Comp40	P2161
Blue Crab	Muscle only	LPR3-CSMT-Comp25	P2161
Blue Crab	Muscle only	LPR2-CSMT-Comp21	P2161
2.45 5.45	massic striy	zi iz demi dempzi	. 2.0.
Blue Crab	Muscle only	LPR6-CSMT-Comp43	P2160
Blue Crab	Muscle only	LPR3-CSMT-Comp29	P2160
Blue Crab	Muscle only	LPR5-CSMT-Comp36	P2160
Blue Crab	Muscle only	LPR7-CSMT-Comp47	P2160
Blue Crab	Muscle only	LPR7-CSMT-Comp51	P2160
Blue Crab	Muscle only	LPR8-CSMT-Comp59	P2160
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Blue Crab	Muscle only	LPR8-CSMT-Comp60	P2160
Blue Crab	Muscle only	LPR8-CSMT-Comp62	P2160
Blue Crab	Muscle only	LPR1-CSMT-Comp05	P2160
Blue Crab	Muscle only	LPR1-CSMT-Comp09	P2160
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05	P2159
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp63	P2159
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp09	P2159
Blue Crab	Hepatopancreas only	LPR3-CSHT-Comp64	P2159
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp21	P2159
Blue Crab	Hepatopancreas only	LPRX-CSHT-Comp65	P2159
Blue Crab	Hepatopancreas only	LPR8-CSHT-Comp66	P2159
5.40 0.45	. Topatoparier eas ermy	21 1 to 00111 00111poo	. 2.00
Rinsate Blank		LPR-032310-RB	P2463
Rinsate Blank		LPR-041210-RB	P2463
Rinsate Blank		LPR-060810-RB	P2463
Rinsate Blank		LPR-061510-RB	P2463
Rinsate Blank		LPR-062910-RB	P2463
Rinsate Blank		LPR-071310-RB	P2463
Rinsate Blank		LPR-071910-RB	P2463
Morthorn niko	Fillet (with akin)	LPR6-ELFT-Ind001	Dagg
Northern pike	Fillet (with skin)		P2333
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Comp01	P2333
Largemouth bass	Fillet (with skin)	LPR8-MSFT-Ind002	P2333
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Ind009	P2333
Smallmouth bass	Fillet (with skin)	LPR4-MDFT-Comp01	P2333
Smallmouth bass	Fillet (with skin)	LPR5-MDFT-Comp02	P2333
Smallmouth bass	Fillet (with skin)	LPR8-MDFT-Comp03	P2333
N. 41			50054
Northern pike	Carcass	LPR6-ELCT-Ind001	P2351
Largemouth bass	Carcass	LPR5-MSCT-Comp01	P2351
Largemouth bass	Carcass	LPR8-MSCT-Ind002	P2351
Largemouth bass	Carcass	LPR5-MSCT-Ind009	P2351
Smallmouth bass	Carcass	LPR4-MDCT-Comp01	P2351
Smallmouth bass	Carcass	LPR5-MDCT-Comp02	P2351
Smallmouth bass	Carcass	LPR8-MDCT-Comp03	P2351
Carp	Whole body	LPR3-CCWB-Ind002	P2352
Carp	Whole body	LPR3-CCWB-Ind005	P2352
Carp	Whole body	LPR5-CCWB-Ind011	P2352
Carp	Whole body	LPR6-CCWB-Ind021	P2352
Carp	Whole body	LPR6-CCWB-Ind028	P2352
Carp	Whole body	LPR7-CCWB-Ind042	P2352
Carp	Whole body	LPR7-CCWB-Ind069	P2352
Carp	Whole body	LPR8-CCWB-Ind139	P2352
Carp	Whole body	LPR8-CCWB-Ind147	P2352
Carp	Whole body	LPR5-CCWB-Ind160	P2352
Carp	Whole body	LPR4-CCWB-Ind175	P2352
Carp	Whole body	LPR4-CCWB-Ind186	P2352
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Brown Bullhead Brown Bullhead Brown Bullhead Brown Bullhead Brown Bullhead Brown Bullhead	Whole body Whole body Whole body Whole body Whole body	LPR3-ANWB-Ind001 LPR6-ANWB-Ind004 LPR4-ANWB-Ind007 LPR6-ANWB-Ind003 LPR6-ANWB-Ind005 LPR7-ANWB-Ind006	P2353 P2353 P2353 P2353 P2353 P2353
Carp	Fillet (with skin)	LPR3-CCFT-Ind001	P2354
Carp	Fillet (with skin)	LPR3-CCFT-Ind004	P2354
Carp	Fillet (with skin)	LPR6-CCFT-Ind032	P2354
Carp	Fillet (with skin)	LPR7-CCFT-Ind068	P2354
Carp	Fillet (with skin)	LPR7-CCFT-Ind092	P2354
Carp	Fillet (with skin)	LPR6-CCFT-Ind104	P2354
Carp	Fillet (with skin)	LPR8-CCFT-Ind121	P2354
Carp	Fillet (with skin)	LPR8-CCFT-Ind131	P2354
Carp	Fillet (with skin)	LPR4-CCFT-Ind155	P2354
Carp	Fillet (with skin)	LPR4-CCFT-Ind156	P2354
Carp	Fillet (with skin)	LPR5-CCFT-Ind181	P2354
Carp	Fillet (with skin)	LPR5-CCFT-Ind184	P2354
White perch	Whole body	LPR1-MAWB-Ind138	P2429
White perch	Whole body	LPR2-MAWB-Ind158	P2429
White perch	Whole body	LPR8-MAWB-Comp32	P2429
White perch	Whole body	LPR8-MAWB-Comp28	P2429
White perch	Whole body	LPR8-MAWB-Comp29	P2429
White perch	Whole body	LPR4-MAWB-Comp14	P2429
White perch	Whole body	LPR5-MAWB-Comp19	P2429
White perch	Whole body	LPR5-MAWB-Comp18	P2429
White perch	Whole body	LPR5-MAWB-Comp23	P2429
White perch	Whole body	LPR4-MAWB-Comp15	P2429
White perch	Fillet (with skin)	LPR3-MAFT-Comp02	P2426
White perch	Fillet (with skin)	LPR3-MAFT-Comp03	P2426
White perch	Fillet (with skin)	LPR3-MAFT-Comp04	P2426
White perch	Fillet (with skin)	LPR3-MAFT-Comp05	P2426
White perch	Fillet (with skin)	LPR3-MAFT-Comp07	P2426
White perch	Fillet (with skin)	LPR3-MAFT-Comp08	P2426
White perch	Fillet (with skin)	LPR3-MAFT-Comp13	P2426
White perch	Fillet (with skin)	LPR6-MAFT-Comp24	P2426
White perch	Fillet (with skin)	LPR6-MAFT-Ind122	P2426
White perch	Fillet (with skin)	LPR1-MAFT-Comp01	P2426
White perch	Fillet (with skin)	LPR8-MAFT-Comp26	P2427
White perch	Fillet (with skin)	LPR8-MAFT-Comp31	P2427
White perch	Fillet (with skin)	LPR8-MAFT-Comp27	P2427
White perch	Fillet (with skin)	LPR5-MAFT-Comp20	P2427
White perch	Fillet (with skin)	LPR5-MAFT-Comp21	P2427
White perch	Fillet (with skin)	LPR5-MAFT-Comp22	P2427

White perch	Fillet (with skin)	LPR4-MAFT-Comp16	P2427
White perch	Fillet (with skin)	LPR4-MAFT-Comp17	P2427
White perch	Fillet (with skin)	LPR1-MAFT-Ind145	P2427
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White perch	Carcass	LPR1-MACT-Ind145	P2428
White perch	Whole body	LPR3-MAWB-Comp06	P2428
White perch	Whole body	LPR3-MAWB-Comp09	P2428
White perch	Whole body	LPR3-MAWB-Comp10	P2428
White perch	Whole body	LPR3-MAWB-Comp11	P2428
White perch	Whole body	LPR3-MAWB-Comp12	P2428
White perch	Whole body	LPR3-MAWB-Comp30	P2428
White perch	Whole body	LPR7-MAWB-Ind123	P2428
White perch	Whole body	LPR7-MAWB-Comp25	P2428
White perch	Whole body	LPR6-MAWB-Ind128	P2428
White sucker	Fillet (with skin)	LPR8-WSFT-Ind009	P2413
White sucker	Carcass	LPR8-WSCT-Ind009	P2413
White sucker	Fillet (with skin)	LPR8-WSFT-Ind013	P2413
White sucker	Carcass	LPR8-WSCT-Ind013	P2413
White sucker		LPR5-WSFT-Ind019	P2413
	Fillet (with skin)		
White sucker	Carcass	LPR5-WSCT-Ind019	P2413
White sucker	Fillet (with skin)	LPR5-WSFT-Ind020	P2413
White sucker	Carcass	LPR5-WSCT-Ind020	P2413
White sucker	Fillet (with skin)	LPR4-WSFT-Ind023	P2413
White sucker	Carcass	LPR4-WSCT-Ind023	P2413
Channel catfish	Carcass	LPR5-IPCT-Ind001	P2414
Channel catfish	Carcass	LPR6-IPCT-Ind003	P2414
Channel catfish	Carcass	LPR6-IPCT-Ind004	P2414
Channel catfish	Carcass	LPR7-IPCT-Ind005	P2414
Channel catfish	Carcass	LPR7-IPCT-Ind006	P2414
Channel catfish	Carcass	LPR8-IPCT-Ind008	P2414
Channel catfish	Carcass	LPR8-IPCT-Ind009	P2414
Channel catfish	Carcass	LPR8-IPCT-Ind010	P2414
Channel catfish	Carcass	LPR8-IPCT-Ind011	P2414
Channel catfish	Carcass	LPR8-IPCT-Ind012	P2414
Channel catfish	Carcass	LPR8-IPCT-Ind013	P2414
Channel catfish	Fillet (skinless)	LPR5-IPFT-Ind001	P2415
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind003	P2415
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind004	P2415
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind005	P2415
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind006	P2415
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind008	P2415
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind009	P2415
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind010	P2415
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind011	P2415
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind012	P2415
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind013	P2415
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White catfish	Carcass	LPR3-ACCT-Ind001	P2416
White catfish	Carcass	LPR3-ACCT-Ind002	P2416
White catfish	Carcass	LPR3-ACCT-Ind003	P2416
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White catfish	Carcass	LPR3-ACCT-Ind005	P2416
White catfish	Carcass	LPR5-ACCT-Ind006	P2416
White catfish	Carcass	LPR6-ACCT-Ind008	P2416
White catfish	Carcass	LPR6-ACCT-Ind009	P2416
White catfish	Carcass	LPR6-ACCT-Ind010	P2416
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White catfish	Carcass	LPR6-ACCT-Ind013	P2416
White catfish	Carcass	LPR7-ACCT-Ind014	P2416
White catfish	Carcass	LPR6-ACCT-Ind016	P2416
White catfish	Carcass	LPR7-ACCT-Ind017	P2416
White catfish	Fillet (skinless)	LPR3-ACFT-Ind001	P2418
White catfish	Fillet (skinless)	LPR3-ACFT-Ind002	P2418
White catfish	` ,		
	Fillet (skinless)	LPR3-ACFT-Ind003	P2418
White catfish	Fillet (skinless)	LPR3-ACFT-Ind005	P2418
White catfish	Fillet (skinless)	LPR5-ACFT-Ind006	P2418
White catfish	Fillet (skinless)	LPR6-ACFT-Ind008	P2418
White catfish	Fillet (skinless)	LPR6-ACFT-Ind009	P2418
White catfish	Fillet (skinless)	LPR6-ACFT-Ind010	P2418
White catfish	Fillet (skinless)	LPR6-ACFT-Ind013	P2418
White catfish	Fillet (skinless)	LPR7-ACFT-Ind014	P2418
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White catfish	Fillet (skinless)	LPR6-ACFT-Ind016	P2418
White catfish	Fillet (skinless)	LPR7-ACFT-Ind017	P2418
White catfish	Carcass	LPR2-ACCT-Ind018	P2419
White catfish	Carcass	LPR8-ACCT-Ind019	P2419
White catfish	Carcass	LPR8-ACCT-Ind020	P2419
White catfish	Carcass	LPR8-ACCT-Ind021	P2419
White catfish	Carcass	LPR8-ACCT-Ind022	P2419
White catfish	Carcass	LPR4-ACCT-Ind023	P2419
White catfish	Carcass	LPR5-ACCT-Ind024	P2419
White catfish	Fillet (skinless)	LPR2-ACFT-Ind018	P2420
White catfish	Fillet (skinless)	LPR8-ACFT-Ind019	P2420
White catfish	Fillet (skinless)	LPR8-ACFT-Ind020	P2420
White catfish	Fillet (skinless)	LPR8-ACFT-Ind021	P2420
White catfish	Fillet (skinless)	LPR8-ACFT-Ind022	P2420
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White catfish	Fillet (skinless)	LPR4-ACFT-Ind023	P2420
White catfish	Fillet (skinless)	LPR5-ACFT-Ind024	P2420
American eel	Fillet (skinless)	LPR3-ARFT-Comp20	P2447
American eel	Fillet (skinless)	LPR3-ARFT-Comp06	P2447
American eel	Fillet (skinless)	LPR3-ARFT-Ind005	P2447
American eel	Fillet (skinless)	LPR3-ARFT-Comp05	P2447
American eel	Fillet (skinless)	LPR3-ARFT-Ind010	P2447
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American eel	Fillet (skinless)	LPR3-ARFT-Ind014	P2447

American eel	Fillet (skinless)	LPR5-ARFT-Comp09	P2447
American eel	Fillet (skinless)	LPR5-ARFT-Ind021	P2447
American eel	Fillet (skinless)	LPR4-ARFT-Ind022	P2447
American eel	Fillet (skinless)	LPR4-ARFT-Ind026	P2447
American eel	Fillet (skinless)	LPR5-ARFT-Comp12	P2447
American eel	Fillet (skinless)	LPR5-ARFT-Ind030	P2447
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American eel	Fillet (skinless)	LPR4-ARFT-Comp07	P2448
American eel	Fillet (skinless)	LPR4-ARFT-Ind034	P2448
American eel	Fillet (skinless)	LPR5-ARFT-Comp10	P2448
American eel	Fillet (skinless)	LPR5-ARFT-Ind040	P2448
American eel	Fillet (skinless)	LPR4-ARFT-Comp08	P2448
American eel	Fillet (skinless)	LPR4-ARFT-Ind044	P2448
American eel	Fillet (skinless)	LPR5-ARFT-Ind049	P2448
American eel	Fillet (skinless)	LPR5-ARFT-Ind048	P2448
American eel	Fillet (skinless)	LPR6-ARFT-Ind065	P2448
American eel	Fillet (skinless)	LPR7-ARFT-Ind071	P2448
American eel	Fillet (skinless)	LPR6-ARFT-Ind073	P2448
American eel	Fillet (skinless)	LPR1-ARFT-Comp01	P2449
American eel	Fillet (skinless)	LPR1-ARFT-Comp02	P2449
American eel	Fillet (skinless)	LPR5-ARFT-Ind086	P2449
American eel	Fillet (skinless)	LPR8-ARFT-Comp17	P2449
American eel	Fillet (skinless)	LPR8-ARFT-Comp21	P2449
American eel	Fillet (skinless)	LPR8-ARFT-Comp22	P2449
American eel	Fillet (skinless)	LPR8-ARFT-Comp14	P2449
American eel	Fillet (skinless)	LPR2-ARFT-Comp04	P2449
American eel	Fillet (skinless)	LPR1-ARFT-Ind085	P2449
	,		
American eel	Whole body	LPR3-ARWB-Ind001	P2451
American eel	Whole body	LPR3-ARWB-Ind009	P2451
American eel	Whole body	LPR3-ARWB-Ind012	P2451
American eel	Whole body	LPR4-ARWB-Ind024	P2451
American eel	Whole body	LPR4-ARWB-Ind025	P2451
American eel	Whole body	LPR5-ARWB-Ind039	P2451
American eel	Whole body	LPR4-ARWB-Ind043	P2451
American eel	Whole body	LPR5-ARWB-Comp11	P2451
American eel	Whole body	LPR4-ARWB-Ind060	P2451
American eel	Whole body	LPR5-ARWB-Ind062	P2451
American eel	Whole body	LPR7-ARWB-Ind070	P2451
American eel	Whole body	LPR6-ARWB-Ind069	P2451
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American eel	Carcass	LPR2-ARCT-Comp04	P2450
American eel	Carcass	LPR1-ARCT-Ind085	P2450
American eel	Whole body	LPR6-ARWB-Ind074	P2450
American eel	Whole body	LPR1-ARWB-Comp03	P2450
American eel	Whole body	LPR8-ARWB-Comp16	P2450
American eel	Whole body	LPR8-ARWB-Comp15	P2450
American eel	Whole body	LPR8-ARWB-Comp18	P2450
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American eel Whole body LPR8-ARWB-Comp13 P2450
American eel Whole body LPR8-ARWB-Comp19 P2450



	2022/2025	РСВ
Lab ID	PCDD/PCDF (1613B)	Congeners (1668B)
P2102 001	X	X
P2102 002	X	X
P2102 003	X	X
P2102 004	X	X
P2102 005	X	X
P2102 006	X	X
P2102 007	X	X
P2102 008	X	X
P2102_009	X	X
P2102_010	X	X
P2102_011	X	X
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P2103_001	X	X
P2103_002	X	X
P2103_003	X	X
P2103_004	X	X
P2103_005	X	X
P2103_006	X	X
P2103_007	X	X
P2103_008	X	X
P2103_009	X	X
P2103_010	X	X
P2135 001	×	Х
P2135 002	X	X
P2135 003	X	X
P2135 004	X	X
P2135 005	X	X
P2135_006	X	X
P2135 007	X	X
P2135 008	X	X
P2135 009	X	X
P2135 010	X	X
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P2140_001	X	X
P2140_002	X	X
P2140_003	X	X
P2140_004	X	X
P2140_005	X	X
P2140_006	X	X
P2140_007	X	X

P2140 008	X	х
P2140 009	X	X
-		
P2140_010	X	Х
P2133 001		
1 2 133_001	X	Х
P2133 002	X	X
P2133 003	Х	х
P2133 004	X	Х
P2133 005		
-	Х	Х
P2133_006	X	Х
P2133_007	X	Х
P2133_008	X	Х
P2133 009	X	Х
P2133 010	X	Х
1 2100_010	X	^
D2424 004		.,
P2134_001	X	Х
P2134_002	X	Х
P2134_003	X	Х
P2134 004	X	Х
P2134 005	Х	х
P2134 006	X	X
P2134_007		
_	Х	Х
P2134_008	X	Х
P2134_009	X	X
P2134_010	X	Х
P2134 011	Х	х
P2134 012	X	X
P2134 013	X	X
_		
P2134_014	X	Х
P2161_001	X	X
P2161 002	X	Х
P2161 003	X	х
P2161 004	X	X
P2161_005		
_	Х	Х
P2161_006	X	Х
P2161_007	X	Х
P2161_008	X	Х
P2161 009	X	Х
P2161 010	X	Х
P2161 011	X	X
F2101_011	^	^
D0400 004		
P2160_001	X	Х
P2160_002	X	Χ
P2160_003	X	Х
P2160 004	X	Х
P2160 005	X	X
P2160_005 P2160_006		
F Z 100_000	Х	Х

P2160 007	Χ	X
P2160 008	Χ	Х
P2160_009	X	X
-		
P2160_010	X	Х
D0450 004		
P2159_001	Х	Х
P2159_002	Х	Х
P2159_003	X	X
P2159 004	X	X
P2159 005	Х	Х
P2159 006	X	X
P2159 007	X	X
1 2 100_007	^	^
P2463 001	Х	Х
P2463 002	X	X
P2463 003	X	X
-		
P2463_004	Χ	Х
P2463_005	Χ	X
P2463_006	X	X
P2463_007	Χ	Х
P2333_001	Χ	Χ
P2333 002	X	X
P2333 003	Х	Х
P2333 004	X	X
-		
P2333_005	X	Х
P2333_006	Χ	Х
P2333_007	Χ	Х
D0054 004		
P2351_001	Χ	Х
P2351_002	X	X
P2351_003	X	Х
P2351 004	Χ	х
P2351 005	Х	Х
P2351 006	X	X
-		
P2351_007	Х	Х
P2352 001	X	х
P2352_001		
-	X	X
P2352_003	Х	Х
P2352_004	X	X
P2352_005	Χ	X
P2352_006	Χ	Х
P2352 007	Х	Х
P2352 008	X	X
P2352 009	X	X
-		
P2352_010	X	Х
P2352_011	Χ	Х
P2352_012	Χ	Х

D0050 004		
P2353_001	X	X
P2353_002	X	X
P2353_003	X	X
P2353_004	X	X
P2353_005	Х	Χ
P2353_006	X	X
D0054 004		
P2354_001	X	X
P2354_002	X	X
P2354_003	X	X
P2354_004	X	X
P2354_005	X	X
P2354_006	X	X
P2354_007	X	Χ
P2354_008	X	Χ
P2354_009	X	Χ
P2354_010	X	Χ
P2354_011	X	Χ
P2354_012	X	Χ
P2429_001	X	Χ
P2429_002	X	Χ
P2429_003	X	Χ
P2429_004	X	Χ
P2429_005	X	Χ
P2429_006	X	Χ
P2429_007	X	Χ
P2429_008	X	Χ
P2429_009	X	Χ
P2429_010	X	Χ
P2426_001	X	Χ
P2426_002	X	Χ
P2426_003	X	Χ
P2426_004	X	Χ
P2426_005	X	Χ
P2426_006	X	Χ
P2426_007	X	Χ
P2426_008	X	Χ
P2426_009	X	Χ
P2426_010	X	Χ
P2427_001	X	Χ
P2427_002	X	Χ
P2427_003	X	Χ
P2427_004	X	Χ
P2427_005	X	Χ
P2427_006	X	Χ

P2427_007 P2427_008 P2427_009	x x x	x x x
P2428_001 P2428_002 P2428_003 P2428_004 P2428_005 P2428_006 P2428_007 P2428_008 P2428_009 P2428_010	x x x x x x x x	x x x x x x x x x
P2413_006 P2413_001 P2413_007 P2413_002 P2413_008 P2413_003 P2413_009 P2413_004 P2413_010 P2413_005	x x x x x x x x	x x x x x x x x x
P2414_007 P2414_008 P2414_009 P2414_010 P2414_011 P2414_001 P2414_002 P2414_003 P2414_004 P2414_005 P2414_006	x x x x x x x x x	x x x x x x x x x x
P2415_007 P2415_008 P2415_009 P2415_010 P2415_011 P2415_001 P2415_002 P2415_003 P2415_004 P2415_005 P2415_006	x x x x x x x x x	x x x x x x x x x x

P2416_001 P2416_002 P2416_003 P2416_004 P2416_005 P2416_006 P2416_007 P2416_008 P2416_009 P2416_010 P2416_011	x x x x x x x x	x x x x x x x x x
P2416_012 P2418_001 P2418_002 P2418_003 P2418_004 P2418_005 P2418_006 P2418_007 P2418_008 P2418_009 P2418_010	x x x x x x x x	x x x x x x x x x
P2418_011 P2418_012 P2419_001 P2419_002 P2419_003 P2419_004 P2419_005 P2419_006	x x x x x x	x x x x x x x
P2419_007 P2419_007 P2420_001 P2420_002 P2420_003 P2420_004 P2420_005 P2420_006 P2420_007	x x x x x x x	x x x x x x x
P2447_001 P2447_002 P2447_003 P2447_004 P2447_005 P2447_006	x x x x x	x x x x x

P2447_007	X	Χ
P2447_008	X	Χ
P2447_009	X	Χ
P2447_010	X	Χ
P2447_011	X	Χ
P2447_012	X	Χ
P2448_001	X	Х
P2448 002	X	Х
P2448 003	X	Х
P2448 004	X	Х
P2448 005	X	Х
P2448 006	Х	Х
P2448 007	Х	Х
P2448 008	Х	Х
P2448 009	Х	Х
P2448 010	X	X
P2448 011	X	Х
12110_011	X	^
P2449 001	X	х
P2449 002	X	X
P2449 003	X	X
P2449 004	X	X
P2449_005	X	X
P2449_006	X	X
P2449_000 P2449_007		
P2449_007 P2449_008	X	X
P2449_008 P2449_009	X	X
F2449_009	X	Х
P2451 001	v	v
P2451_001 P2451_002	X	X
P2451_002 P2451_003	X	X
-	X	X
P2451_004	X	X
P2451_005	X	X
P2451_006	X	X
P2451_007	X	Х
P2451_008	X	Х
P2451_009	Х	Х
P2451_010	X	X
P2451_011	X	Х
P2451_012	X	Х
D04E0 004		
P2450_001	X	Х
P2450_002	X	Х
P2450_003	Х	Х
P2450_004	X	X
P2450_005	X	Х
P2450_006	X	Χ
P2450_007	X	X

2009 Fish and Blue Crab Tissue Chemistry Data for the LPRSA Appendix D

Table D-3. 2009 SDGs, sample IDs, and analyses - Brooks Rand Labs

FINAL

FINAL		
Species	Tissue Type	LPR ID
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp37
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp38
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp31
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp41
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp42
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp44
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp45
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp46
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp49
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp53
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp61
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp48
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp54
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp50
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp55
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp56
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp57
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp01
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp02
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp03
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp04
Rinsate Blank		LPR-032310-RB
Dhua Caab	Carraga	LDD4 CCCT Command
Blue Crab	Carcass	LPR4-CSCT-Comp31
Blue Crab Blue Crab	Carcass	LPR1-CSCT-Comp01
Blue Crab	Carcass	LPR1-CSCT-Comp02
Blue Crab	Carcass Carcass	LPR1-CSCT-Comp03
Blue Crab	Carcass	LPR1-CSCT-Comp04 LPR1-CSCT-Comp06
Blue Crab	Carcass	LPR1-CSCT-Comp07
Blue Crab	Carcass	LPR1-CSCT-Comp11
Blue Crab	G 41 G 43 G	LPR4-CSCT-Comp30
Blue Crab	Carcass Carcass	LPR1-CSCT-Comp13
Blue Crab	Carcass	LPR2-CSCT-Comp14
Blue Crab	Carcass	LPR2-CSCT-Comp17
Blue Crab	Carcass	LPR2-CSCT-Comp15
Blue Crab	Carcass	LPR2-CSCT-Comp18
Blue Crab	Carcass	LPR2-CSCT-Comp19
Blue Crab	Carcass	LPR2-CSCT-Comp19
Blue Crab	Carcass	LPR3-CSCT-Comp24
Blue Crab	Carcass	LPR5-CSCT-Comp34
Blue Crab	Carcass	LPR3-CSCT-Comp26
Blue Crab	Carcass	LPR4-CSCT-Comp32
Diuc Olab	Oai Oass	Li 114-0001-00111p02

Blue Crab	Carcass	LPR4-CSCT-Comp33
Blue Crab	Carcass	LPR3-CSCT-Comp27
Blue Crab	Carcass	LPR3-CSCT-Comp28
Blue Crab	Carcass	•
_		LPR5-CSCT-Comp35
Blue Crab	Muscle only	LPR8-CSMH-Comp58
Blue Crab	Muscle only	LPR1-CSMH-Comp06
Blue Crab	Muscle only	LPR1-CSMH-Comp07
Blue Crab	Muscle only	LPR1-CSMH-Comp11
Blue Crab	Muscle only	LPR4-CSMH-Comp30
Blue Crab	Muscle only	LPR1-CSMH-Comp13
Blue Crab	Muscle only	LPR2-CSMH-Comp14
Blue Crab	Muscle only	LPR2-CSMH-Comp17
Blue Crab	-	-
_	Muscle only	LPR2-CSMH-Comp15
Blue Crab	Muscle only	LPR2-CSMH-Comp18
Blue Crab	Muscle only	LPR2-CSMH-Comp19
Blue Crab	Muscle only	LPR2-CSMH-Comp20
Blue Crab	Muscle only	LPR3-CSMH-Comp24
Blue Crab	Muscle only	LPR5-CSMH-Comp34
Blue Crab	Muscle only	LPR3-CSMH-Comp26
Blue Crab	Muscle only	LPR4-CSMH-Comp32
Blue Crab	Muscle only	LPR4-CSMH-Comp33
Blue Crab	Muscle only	LPR3-CSMH-Comp27
Blue Crab	Muscle only	•
_	-	LPR3-CSMH-Comp28
Blue Crab	Muscle only	LPR5-CSMH-Comp35
Discosto Discolo		L DD 044040 DD
Rinsate Blank		LPR-041210-RB
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05
Blue Crab Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63
Blue Crab		LPR1-CSHT-Comp05
Blue Crab Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63
Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09
Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp08
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp08 LPR1-CSMT-Comp10
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp12
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp65 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp08 LPR1-CSMT-Comp10 LPR1-CSMT-Comp12 LPR2-CSMT-Comp16
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp65 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp16 LPR2-CSMT-Comp16 LPR6-CSMT-Comp39
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp65 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp08 LPR1-CSMT-Comp10 LPR1-CSMT-Comp12 LPR2-CSMT-Comp16
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp65 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp16 LPR2-CSMT-Comp16 LPR6-CSMT-Comp39
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR1-CSMT-Comp12 LPR2-CSMT-Comp39 LPR6-CSMT-Comp22
Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp65 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp16 LPR2-CSMT-Comp16 LPR6-CSMT-Comp23 LPR2-CSMT-Comp23 LPR6-CSMT-Comp40
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp65 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp12 LPR2-CSMT-Comp39 LPR2-CSMT-Comp22 LPR2-CSMT-Comp23 LPR6-CSMT-Comp40 LPR3-CSMT-Comp25
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp21 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp16 LPR2-CSMT-Comp12 LPR2-CSMT-Comp23 LPR2-CSMT-Comp23 LPR2-CSMT-Comp23 LPR6-CSMT-Comp40 LPR3-CSMT-Comp45
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp64 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp12 LPR2-CSMT-Comp16 LPR6-CSMT-Comp23 LPR2-CSMT-Comp23 LPR6-CSMT-Comp40 LPR3-CSMT-Comp40 LPR3-CSMT-Comp43 LPR6-CSMT-Comp43
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp64 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp12 LPR2-CSMT-Comp16 LPR6-CSMT-Comp29 LPR2-CSMT-Comp25 LPR3-CSMT-Comp25 LPR3-CSMT-Comp40 LPR3-CSMT-Comp43 LPR3-CSMT-Comp29 LPR5-CSMT-Comp29
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp64 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp16 LPR6-CSMT-Comp39 LPR2-CSMT-Comp22 LPR2-CSMT-Comp23 LPR6-CSMT-Comp23 LPR6-CSMT-Comp40 LPR3-CSMT-Comp40 LPR3-CSMT-Comp43 LPR3-CSMT-Comp43 LPR3-CSMT-Comp49 LPR5-CSMT-Comp47
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp64 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp12 LPR2-CSMT-Comp16 LPR6-CSMT-Comp29 LPR2-CSMT-Comp23 LPR6-CSMT-Comp23 LPR6-CSMT-Comp40 LPR3-CSMT-Comp40 LPR3-CSMT-Comp40 LPR3-CSMT-Comp43 LPR6-CSMT-Comp43 LPR6-CSMT-Comp43 LPR6-CSMT-Comp45 LPR7-CSMT-Comp51
Blue Crab Blue Crab	Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Hepatopancreas only Muscle only	LPR1-CSHT-Comp05 LPR2-CSHT-Comp63 LPR1-CSHT-Comp09 LPR3-CSHT-Comp64 LPR2-CSHT-Comp64 LPRX-CSHT-Comp65 LPR8-CSHT-Comp66 LPR7-CSMT-Comp52 LPR1-CSMT-Comp10 LPR1-CSMT-Comp10 LPR2-CSMT-Comp16 LPR6-CSMT-Comp39 LPR2-CSMT-Comp22 LPR2-CSMT-Comp23 LPR6-CSMT-Comp23 LPR6-CSMT-Comp40 LPR3-CSMT-Comp40 LPR3-CSMT-Comp43 LPR3-CSMT-Comp43 LPR3-CSMT-Comp49 LPR5-CSMT-Comp47

Blue Crab Blue Crab Blue Crab Blue Crab Blue Crab	Muscle only Muscle only Muscle only Muscle only Muscle only	LPR8-CSMT-Comp60 LPR8-CSMT-Comp62 LPR1-CSMT-Comp05 LPR1-CSMT-Comp09 LPR2-CSMT-Comp21
Rinsate Blank Northern pike Largemouth bass Largemouth bass Largemouth bass Smallmouth bass Smallmouth bass Smallmouth bass Northern pike Largemouth bass Largemouth bass Largemouth bass Smallmouth bass Smallmouth bass Smallmouth bass Smallmouth bass	Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Carcass Carcass Carcass Carcass Carcass Carcass Carcass Carcass Carcass	LPR-060810-RB LPR6-ELFT-Ind001 LPR5-MSFT-Comp01 LPR8-MSFT-Ind002 LPR5-MSFT-Ind009 LPR4-MDFT-Comp01 LPR5-MDFT-Comp02 LPR8-MDFT-Comp03 LPR6-ELCT-Ind001 LPR5-MSCT-Comp01 LPR8-MSCT-Ind002 LPR5-MSCT-Ind009 LPR4-MDCT-Comp01 LPR5-MDCT-Comp01 LPR5-MDCT-Comp01
Rinsate Blank Carp Carp Carp Carp Carp Carp Carp Carp	Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Fillet (with skin) Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-061510-RB LPR3-CCFT-Ind001 LPR3-CCFT-Ind004 LPR6-CCFT-Ind032 LPR7-CCFT-Ind068 LPR7-CCFT-Ind092 LPR6-CCFT-Ind104 LPR8-CCFT-Ind121 LPR8-CCFT-Ind131 LPR4-CCFT-Ind155 LPR4-CCFT-Ind156 LPR5-CCFT-Ind181 LPR5-CCFT-Ind184 LPR4-CCWB-Ind175 LPR4-CCWB-Ind175 LPR4-CCWB-Ind001 LPR6-ANWB-Ind004 LPR4-ANWB-Ind007 LPR6-ANWB-Ind005 LPR7-ANWB-Ind005 LPR3-CCWB-Ind005 LPR3-CCWB-Ind005 LPR3-CCWB-Ind005 LPR5-CCWB-Ind005 LPR5-CCWB-Ind0011 LPR6-CCWB-Ind001

Carp	Whole body	LPR7-CCWB-Ind042
Carp	Whole body	LPR7-CCWB-Ind069
Carp	Whole body	LPR8-CCWB-Ind139
Carp	Whole body	LPR8-CCWB-Ind147
Carp	Whole body	LPR5-CCWB-Ind160
Rinsate Blank		LPR-062910-RB
White sucker	Fillet (with skin)	LPR8-WSFT-Ind009
White sucker	Fillet (with skin)	LPR8-WSFT-Ind013
White sucker	Fillet (with skin)	LPR5-WSFT-Ind019
White sucker	Fillet (with skin)	LPR5-WSFT-Ind020
White sucker	Fillet (with skin)	LPR4-WSFT-Ind023
Channel catfish	Fillet (skinless)	LPR5-IPFT-Ind001
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind003
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind004
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind005
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind006
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind008
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind009
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind010
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind011
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind012
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind013
White catfish	Fillet (skinless)	LPR3-ACFT-Ind001
White catfish	Fillet (skinless)	LPR3-ACFT-Ind002
White catfish	Fillet (skinless)	LPR3-ACFT-Ind003
White catfish	Fillet (skinless)	LPR3-ACFT-Ind005
White catfish	Fillet (skinless)	LPR5-ACFT-Ind006
White catfish	Fillet (skinless)	LPR6-ACFT-Ind008
White catfish	Fillet (skinless)	LPR6-ACFT-Ind009
White catfish	Fillet (skinless)	LPR6-ACFT-Ind010
White catfish	Fillet (skinless)	LPR6-ACFT-Ind013
White catfish	Fillet (skinless)	LPR7-ACFT-Ind014
White catfish	Fillet (skinless)	LPR6-ACFT-Ind016
White catfish	Fillet (skinless)	LPR7-ACFT-Ind017
White catfish	Fillet (skinless)	LPR2-ACFT-Ind018
White catfish	Fillet (skinless)	LPR8-ACFT-Ind019
White catfish	Fillet (skinless)	LPR8-ACFT-Ind020
White catfish	Fillet (skinless)	LPR8-ACFT-Ind021
White catfish	Fillet (skinless)	LPR8-ACFT-Ind022
White catfish	Fillet (skinless)	LPR4-ACFT-Ind023
White catfish	Fillet (skinless)	LPR5-ACFT-Ind024
White sucker	Carcass	LPR8-WSCT-Ind009
White sucker	Carcass	LPR8-WSCT-Ind013
White sucker	Carcass	LPR5-WSCT-Ind019
White sucker	Carcass	LPR5-WSCT-Ind020
White sucker	Carcass	LPR4-WSCT-Ind023

Channel catfish	Carcass	LPR5-IPCT-Ind001
Channel catfish	Carcass	LPR6-IPCT-Ind003
Channel catfish	Carcass	LPR6-IPCT-Ind004
Channel catfish	Carcass	LPR7-IPCT-Ind005
Channel catfish	Carcass	LPR7-IPCT-Ind006
Channel catfish	Carcass	LPR8-IPCT-Ind008
Channel catfish	Carcass	LPR8-IPCT-Ind009
Channel catfish	Carcass	LPR8-IPCT-Ind010
Channel catfish	Carcass	LPR8-IPCT-Ind011
Channel catfish	Carcass	LPR8-IPCT-Ind012
Channel catfish	Carcass	LPR8-IPCT-Ind013
White catfish	Carcass	LPR3-ACCT-Ind001
White catfish	Carcass	LPR3-ACCT-Ind002
White catfish	Carcass	LPR3-ACCT-Ind003
White catfish	Carcass	LPR3-ACCT-Ind005
White catfish	Carcass	LPR5-ACCT-Ind006
White catfish	Carcass	LPR6-ACCT-Ind008
White catfish	Carcass	LPR6-ACCT-Ind009
White catfish	Carcass	LPR6-ACCT-Ind010
White catfish	Carcass	LPR6-ACCT-Ind013
White catfish	Carcass	LPR7-ACCT-Ind014
White catfish	Carcass	LPR6-ACCT-Ind016
White catfish	Carcass	LPR7-ACCT-Ind017
White catfish	Carcass	LPR2-ACCT-Ind018
White catfish	Carcass	LPR8-ACCT-Ind019
White catfish	Carcass	LPR8-ACCT-Ind020
White catfish	Carcass	LPR8-ACCT-Ind021
White catfish	Carcass	LPR8-ACCT-Ind022
White catfish	Carcass	LPR4-ACCT-Ind023
White catfish	Carcass	LPR5-ACCT-Ind024
Rinsate Blank		LPR-071310-RB
White perch	Fillet (with skin)	LPR3-MAFT-Comp02
White perch	Fillet (with skin)	LPR3-MAFT-Comp03
White perch	Fillet (with skin)	LPR3-MAFT-Comp04
White perch	Fillet (with skin)	LPR3-MAFT-Comp05
White perch	Fillet (with skin)	LPR3-MAFT-Comp07
White perch	Fillet (with skin)	LPR3-MAFT-Comp08
White perch	Fillet (with skin)	LPR3-MAFT-Comp13
White perch	Fillet (with skin)	LPR6-MAFT-Comp24
White perch	Fillet (with skin)	LPR6-MAFT-Ind122
White perch	Fillet (with skin)	LPR1-MAFT-Comp01
White perch	Fillet (with skin)	LPR8-MAFT-Comp26
White perch	Fillet (with skin)	LPR8-MAFT-Comp31
White perch	Fillet (with skin)	LPR8-MAFT-Comp27
White perch	Fillet (with skin)	LPR5-MAFT-Comp20
White perch	Fillet (with skin)	LPR5-MAFT-Comp21
White perch	Fillet (with skin)	LPR5-MAFT-Comp22
White perch	Fillet (with skin)	LPR4-MAFT-Comp16
TTING POTOIT	i mot (with ordin)	Li itti wati i Sompio

White perch	Fillet (with skin)	LPR4-MAFT-Comp17
White perch	Fillet (with skin)	LPR1-MAFT-Ind145
ı	,	
White perch	Carcass	LPR1-MACT-Ind145
White perch	Whole body	LPR3-MAWB-Comp06
White perch	Whole body	LPR3-MAWB-Comp09
White perch	Whole body	LPR3-MAWB-Comp10
White perch	Whole body	LPR3-MAWB-Comp11
White perch	Whole body	LPR3-MAWB-Comp12
White perch	Whole body	LPR3-MAWB-Comp30
White perch	Whole body	LPR7-MAWB-Ind123
White perch	Whole body	LPR7-MAWB-Comp25
White perch	Whole body	LPR6-MAWB-Ind128
White perch	Whole body	LPR1-MAWB-Ind138
White perch	Whole body	LPR2-MAWB-Ind158
White perch	Whole body	LPR8-MAWB-Comp32
White perch	Whole body	LPR8-MAWB-Comp28
White perch	Whole body	LPR8-MAWB-Comp29
White perch	Whole body	LPR4-MAWB-Comp14
White perch	Whole body	LPR5-MAWB-Comp19
White perch	Whole body	LPR5-MAWB-Comp18
White perch	Whole body	LPR5-MAWB-Comp23
White perch	Whole body	LPR4-MAWB-Comp15
Rinsate Blank		LPR-071910-RB
American eel	Fillet (skinless)	LPR3-ARFT-Comp20
American eel	Fillet (skinless)	LPR3-ARFT-Comp06
American eel	Fillet (skinless)	LPR3-ARFT-Ind005
American eel	Fillet (skinless)	LPR3-ARFT-Comp05
American eel	Fillet (skinless)	LPR3-ARFT-Ind010
American eel	Fillet (skinless)	LPR3-ARFT-Ind014
American eel	Fillet (skinless)	LPR5-ARFT-Comp09
American eel	Fillet (skinless)	LPR5-ARFT-Ind021
American eel	Fillet (skinless)	LPR4-ARFT-Ind022
American eel	Fillet (skinless)	LPR4-ARFT-Ind026
American eel	Fillet (skinless)	LPR5-ARFT-Comp12
American eel	Fillet (skinless)	LPR5-ARFT-Ind030
American eel	Fillet (skinless)	LPR4-ARFT-Comp07
American eel	Fillet (skinless)	LPR4-ARFT-Ind034
American eel	Fillet (skinless)	LPR5-ARFT-Comp10
American eel	Fillet (skinless)	LPR5-ARFT-Ind040
American eel	Fillet (skinless)	LPR4-ARFT-Comp08
American eel	Fillet (skinless)	LPR4-ARFT-Ind044
American eel	Fillet (skinless)	LPR5-ARFT-Ind049
American eel	Fillet (skinless)	LPR5-ARFT-Ind048
American eel	Fillet (skinless)	LPR6-ARFT-Ind065
American eel	Fillet (skinless)	LPR7-ARFT-Ind071
American eel	Fillet (skinless)	LPR6-ARFT-Ind073
American eel	Fillet (skinless)	LPR1-ARFT-Comp01

Amaniaan aal		LDD4 ADET Carrage00
American eel	Fillet (skinless)	LPR1-ARFT-Comp02
American eel	Fillet (skinless)	LPR5-ARFT-Ind086
American eel	Fillet (skinless)	LPR8-ARFT-Comp17
American eel	Fillet (skinless)	LPR8-ARFT-Comp21
American eel	Fillet (skinless)	LPR8-ARFT-Comp22
American eel	Fillet (skinless)	LPR8-ARFT-Comp14
American eel	Fillet (skinless)	LPR2-ARFT-Comp04
American eel	Fillet (skinless)	LPR1-ARFT-Ind085
American eel	Carcass	LPR2-ARCT-Comp04
American eel	Carcass	LPR1-ARCT-Ind085
American eel	Whole body	LPR3-ARWB-Ind001
American eel	Whole body	LPR3-ARWB-Ind009
American eel	Whole body	LPR3-ARWB-Ind012
American eel	Whole body	LPR4-ARWB-Ind024
American eel	Whole body	LPR4-ARWB-Ind025
American eel	Whole body	LPR5-ARWB-Ind039
American eel	Whole body	LPR4-ARWB-Ind043
American eel	Whole body	LPR5-ARWB-Comp11
American eel	Whole body	LPR4-ARWB-Ind060
American eel	Whole body	LPR5-ARWB-Ind062
American eel	Whole body	LPR7-ARWB-Ind070
American eel	Whole body	LPR6-ARWB-Ind069
American eel	Whole body	LPR6-ARWB-Ind074
American eel	Whole body	LPR1-ARWB-Comp03
American eel	Whole body	LPR8-ARWB-Comp16
American eel	Whole body	LPR8-ARWB-Comp15
American eel	Whole body	LPR8-ARWB-Comp18
American eel	Whole body	LPR8-ARWB-Comp13
American eel	Whole body	LPR8-ARWB-Comp19



SDG	Lab ID	Methyl mercury (1630)
1013010	1013010-01	X
1013010	1013010-02	X
1013010	1013010-03	X
1013010	1013010-04	X
1013010	1013010-05	X
1013010	1013010-06	X
1013010	1013010-07	X
1013010	1013010-08	X
1013010	1013010-09	X
1013010	1013010-10	X
1013010	1013010-11	X
1013010	1013010-12	X
1013010	1013010-13	X
1013010	1013010-14	X
1013010	1013010-15	X
1013010	1013010-16	x
1013010	1013010-17	X
1013010	1013010-18	x
1013010	1013010-19	x
1013010	1013010-20	x
1013010	1013010-21	X
1013010	1013010-22	X
1015017	1015017-01	X
1015017	1015017-01	×
1015017	1015017-02	X
1015017	1015017-04	×
1015017	1015017-04	x
1015017	1015017-06	X
1015017	1015017-07	×
1015017	1015017-08	X
1015017	1015017-09	X
1015017	1015017-03	x
1015017	1015017-11	x
1015017	1015017-12	×
1015017	1015017-13	×
1015017	1015017-14	×
1015017	1015017-15	X
1015017	1015017-16	X
1015017	1015017-17	X
1015017	1015017-18	X
1015017	1015017-19	X
1015017	1015017-20	X

1015017	1015017-21	X
1015017	1015017-22	X
1015017	1015017-23	Х
1015017	1015017-24	Х
1015017	1015017-34	Х
1015017	1015017-35	Х
1015017	1015017-36	Х
1015017	1015017-37	Х
1015017	1015017-38	Х
1015017	1015017-39	Х
1015017	1015017-40	X
1015017	1015017-41	Х
1015017	1015017-42	X
1015017	1015017-43	X
1015017	1015017-25	X
1015017	1015017-26	Х
1015017	1015017-27	Х
1015017	1015017-28	Х
1015017	1015017-29	Х
1015017	1015017-30	Х
1015017	1015017-44	х
1015017	1015017-31	х
1015017	1015017-32	Х
1015017	1015017-33	х
1016012	1016012-01	X
1016012	1016012-02	Х
1016012	1016012-03	Х
1016012	1016012-04	Х
1016012	1016012-05	Х
1016012	1016012-06	Х
1016012	1016012-07	Х
1016012	1016012-08	Х
1016012	1016012-09	Х
1016012	1016012-10	Х
1016012	1016012-11	Х
1016012	1016012-12	Х
1016012	1016012-13	X
1016012	1016012-14	Х
1016012	1016012-15	X
1016012	1016012-16	X
1016012	1016012-17	х
1016012	1016012-18	Х
1016012	1016012-19	Х
1016012	1016012-20	X
1016012	1016012-21	Х
1016012	1016012-22	Х
1016012	1016012-23	X
1016012	1016012-24	X
	-	

1016012	1016012-25	x
1016012	1016012-26	X
1016012	1016012-27	X
1016012	1016012-28	X
1016012	1016012-29	X
1010012	1010012 20	^
1024008	1024008-01	v
1024008	1024008-01	X
1024008	1024008-02	X
1024008	1024008-03	X X
1024008	1024008-05	X
1024008	1024008-06	X
1024008	1024008-07	X
1024008	1024008-08	X
1024008	1024008-09	X
1024008	1024008-09	X
1024008	1024008-10	X
1024008	1024008-11	X
1024008	1024008-12	X
1024008	1024008-13	
1024008	1024008-14	X
1024006	1024000-13	Х
1025019	1025019-01	Х
1025019	1025019-02	X
1025019	1025019-03	X
1025019	1025019-04	X
1025019	1025019-05	X
1025019	1025019-06	X
1025019	1025019-07	X
1025019	1025019-08	Х
1025019	1025019-09	X
1025019	1025019-10	X
1025019	1025019-11	Х
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1025019	1025019-22	Х
1025019	1025019-23	Х
1025019	1025019-24	Х
1025019	1025019-25	Х
1025019	1025019-26	X

1025019	1025019-27	Х
1025019	1025019-28	Х
1025019	1025019-29	Х
1025019	1025019-30	Х
1025019	1025019-31	X
1020010	102001001	^
1027013	1027013-01	Х
1028033	1028033 01	Х
1028033	1028033 02	Х
1028033	1028033 03	Х
1028033	1028033 ⁰ 4	Х
1028033	1028033 05	Х
1028033	1028033 06	Х
1028033	1028033 07	Х
1028033	1028033 08	Х
1028033	1028033 09	Х
1028033	1028033 ⁻ 10	Х
1028033	1028033 ⁻ 11	Х
1028033	1028033 ⁻ 12	Х
1028033	1028033 13	Х
1028033	1028033 14	Х
1028033	1028033 ⁻ 15	Х
1028033	1028033 16	Х
1028033	1028033 17	Х
1028033	1028033 18	Х
1028033	1028033 19	Х
1028033	1028033 20	Х
1028033	1028033 21	Х
1028033	1028033 22	Х
1028033	1028033 23	Х
1028033	1028033 24	Х
1028033	1028033 25	Х
1028033	1028033 26	Х
1028033	1028033 ² 7	Х
1028033		Х
1028033		Х
1028033	1028033 30	Х
1028033	1028033 31	Х
1028033	1028033 32	Х
1028033	1028033 33	Х
1028033	1028033 34	Х
1028033	1028033 35	Х
	-	
1028015	1028015-01	X
1028015	1028015-02	Х
1028015	1028015-03	X
1028015	1028015-04	X
1028015	1028015-05	X

1028015	1028015-06	Χ
1028015	1028015-07	Χ
1028015	1028015-08	Χ
1028015	1028015-09	Χ
1028015	1028015-10	Χ
1028015	1028015-11	Χ
1028015	1028015-12	Χ
1028015	1028015-13	Χ
1028015	1028015-14	Χ
1028015	1028015-15	Χ
1028015	1028015-16	Χ
1028015	1028015-17	Χ
1028015	1028015-18	Χ
1028015	1028015-19	Χ
1028015	1028015-20	Χ
1028015	1028015-21	Χ
1028015	1028015-22	Х
1028015	1028015-23	Х
1028015	1028015-24	Х
1028015	1028015-25	Х
1028015	1028015-26	Х
1028015	1028015-27	Х
1028015	1028015-28	Х
1028015	1028015-29	Х
1028015	1028015-30	X
1028015	1028015-31	Х
1028015	1028015-32	Х
1028015	1028015-33	Х
1028015	1028015-34	Х
1028015	1028015-35	Х
1020010	1020010 00	^
1029028	1029028-01	Χ
1029028	1029028-02	Χ
1029028	1029028-03	Χ
1029028	1029028-04	Χ
1029028	1029028-05	Χ
1029028	1029028-06	Χ
1029028	1029028-07	Χ
1029028	1029028-08	Χ
1029028	1029028-09	Χ
1029028	1029028-10	Χ
1029028	1029028-11	Χ
1029028	1029028-12	Х
1029028	1029028-13	Х
1029028	1029028-14	Х
1029028	1029028-15	Х
1029028	1029028-16	Χ
1029028	1029028-17	Х
1029028	1029028-18	Х

1029028 1029028	1029028-19 1029028-20	X X
		,
1029029	1029029-01	Χ
1029029	1029029-02	Χ
1029029	1029029-03	Χ
1029029	1029029-04	Χ
1029029	1029029-05	Χ
1029029	1029029-06	Χ
1029029	1029029-07	Χ
1029029	1029029-08	Χ
1029029	1029029-09	Χ
1029029	1029029-10	Χ
1029029	1029029-11	Χ
1029029	1029029-12	Χ
1029029	1029029-13	Χ
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1030013	1030013-07	Х
1030013	1030013-08	Х
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1030013	1030013-43	X
1030013	1030013-44	X
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1030013	1030013-46	X
1030013	1030013-47	X
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Total Mercury (1631)	Inorganic As (1632)
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2009 Fish and Blue Crab Tissue Chemistry Data for the LPRSA Appendix D

Table D-4. 2009 SDGs, sample IDs, and analyses - CAS, Kelso

FINAL

TIVAL		
Species	Tissue Type	LPR ID
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp37
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp38
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp31
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp41
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp42
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp44
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp45
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp46
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp49
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp53
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp61
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp48
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp54
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp50
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp55
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp56
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp57
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp01
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp02
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp03
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp04
Rinsate Blank		LPR-032310-RB
Rinsate Blank		LPR-041210-RB
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp58
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp06
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp07
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp11
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp30
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp13

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Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp14
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp17
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp15
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp18
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp19
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp20
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp24
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp34
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp26
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp32
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp33
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp27
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp28
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp35
Blue Crab	Carcass	LPR4-CSCT-Comp31
Blue Crab	Carcass	LPR1-CSCT-Comp01
Blue Crab	Carcass	LPR1-CSCT-Comp02
Blue Crab	Carcass	LPR1-CSCT-Comp03
Blue Crab	Carcass	LPR1-CSCT-Comp04
Blue Crab	Carcass	LPR1-CSCT-Comp06
Blue Crab	Carcass	LPR1-CSCT-Comp07
Blue Crab	Carcass	LPR1-CSCT-Comp11
Blue Crab	Carcass	LPR4-CSCT-Comp30
Blue Crab	Carcass	LPR1-CSCT-Comp13
Blue Crab	Carcass	LPR2-CSCT-Comp14
Blue Crab	Carcass	LPR2-CSCT-Comp17
Blue Crab	Carcass	LPR2-CSCT-Comp15
Blue Crab	Carcass	LPR2-CSCT-Comp18
Blue Crab	Carcass	LPR2-CSCT-Comp19
Blue Crab	Carcass	LPR2-CSCT-Comp20
Blue Crab	Carcass	LPR3-CSCT-Comp24
Blue Crab	Carcass	LPR5-CSCT-Comp34
Blue Crab	Carcass	LPR3-CSCT-Comp26
Blue Crab	Carcass	LPR4-CSCT-Comp32
Blue Crab	Carcass	LPR4-CSCT-Comp33
Blue Crab	Carcass	LPR3-CSCT-Comp27
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Blue Crab	Carcass	LPR3-CSCT-Comp28
Blue Crab	Carcass	LPR5-CSCT-Comp35
Blue Crab	Muscle only	LPR7-CSMT-Comp52
Blue Crab	Muscle only	LPR1-CSMT-Comp08
Blue Crab	Muscle only	LPR1-CSMT-Comp10
Blue Crab	Muscle only	LPR1-CSMT-Comp12
Blue Crab	Muscle only	LPR2-CSMT-Comp16
Blue Crab	Muscle only	LPR6-CSMT-Comp39
Blue Crab	Muscle only	LPR2-CSMT-Comp22
Blue Crab	Muscle only	LPR2-CSMT-Comp23
Blue Crab	Muscle only	LPR6-CSMT-Comp40
Blue Crab	Muscle only	LPR3-CSMT-Comp25
Blue Crab	Muscle only	LPR6-CSMT-Comp43
Blue Crab	Muscle only	LPR3-CSMT-Comp29
Blue Crab	Muscle only	LPR5-CSMT-Comp36
Blue Crab	Muscle only	LPR7-CSMT-Comp47
Blue Crab	Muscle only	LPR7-CSMT-Comp51
Blue Crab	Muscle only	LPR8-CSMT-Comp59
Blue Crab	Muscle only	LPR8-CSMT-Comp60
Blue Crab	Muscle only	LPR8-CSMT-Comp62
Blue Crab	Muscle only	LPR1-CSMT-Comp05
Blue Crab	Muscle only	LPR1-CSMT-Comp09
Blue Crab	Muscle only	LPR2-CSMT-Comp21
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp63
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp09
Blue Crab	Hepatopancreas only	LPR3-CSHT-Comp64
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp21
Blue Crab	Hepatopancreas only	LPRX-CSHT-Comp65
Blue Crab	Hepatopancreas only	LPR8-CSHT-Comp66
Mummichog	Egg tissue	LPR2-FHET-Comp01
Mummichog	Egg tissue	LPR2-FHET-Comp02
Mummichog	Egg tissue	LPR2-FHET-Comp03
Mummichog	Egg tissue	LPR2-FHET-Comp04

Mummichog	Egg tissue	LPR2-FHET-Comp05
Mummichog	Egg tissue	LPR2-FHET-Comp06
Mummichog	Egg tissue	LPR2-FHET-Comp07
Mummichog	Egg tissue	LPR2-FHET-Comp08
Mummichog	Egg tissue	LPRX-FHET-Comp09
Mummichog	Egg tissue	LPR2-FHET-Comp10
Northern pike	Fillet (with skin)	LPR6-ELFT-Ind001
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Comp01
Largemouth bass	Fillet (with skin)	LPR8-MSFT-Ind002
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Ind009
Smallmouth bass	Fillet (with skin)	LPR4-MDFT-Comp01
Smallmouth bass	Fillet (with skin)	LPR5-MDFT-Comp02
Smallmouth bass	Fillet (with skin)	LPR8-MDFT-Comp03
Northern pike	Carcass	LPR6-ELCT-Ind001
Largemouth bass	Carcass	LPR5-MSCT-Comp01
Largemouth bass	Carcass	LPR8-MSCT-Ind002
Largemouth bass	Carcass	LPR5-MSCT-Ind009
Smallmouth bass	Carcass	LPR4-MDCT-Comp01
Smallmouth bass	Carcass	LPR5-MDCT-Comp02
Smallmouth bass	Carcass	LPR8-MDCT-Comp03
Rinsate Blank		LPR-061510-RB
Carp	Whole body	LPR3-CCWB-Ind002
Carp	Whole body	LPR3-CCWB-Ind005
Carp	Whole body	LPR5-CCWB-Ind011
Carp	Whole body	LPR6-CCWB-Ind021
Carp	Whole body	LPR6-CCWB-Ind028
Carp	Whole body	LPR7-CCWB-Ind042
Carp	Whole body	LPR7-CCWB-Ind069
Carp	Whole body	LPR8-CCWB-Ind139
Carp	Whole body	LPR8-CCWB-Ind147
Carp	Whole body	LPR5-CCWB-Ind160
Carp	Whole body	LPR4-CCWB-Ind175
Carp	Whole body	LPR4-CCWB-Ind186
Brown Bullhead	Whole body	LPR3-ANWB-Ind001
Brown Bullhead	Whole body	LPR6-ANWB-Ind004
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Brown Bullhead	Whole body	LPR4-ANWB-Ind007
Brown Bullhead	Whole body	LPR6-ANWB-Ind003
Brown Bullhead	Whole body	LPR6-ANWB-Ind005
Brown Bullhead	Whole body	LPR7-ANWB-Ind006
Carp	Fillet (with skin)	LPR3-CCFT-Ind001
Carp	Fillet (with skin)	LPR3-CCFT-Ind004
Carp	Fillet (with skin)	LPR6-CCFT-Ind032
Carp	Fillet (with skin)	LPR7-CCFT-Ind068
Carp	Fillet (with skin)	LPR7-CCFT-Ind092
Carp	Fillet (with skin)	LPR6-CCFT-Ind104
Carp	Fillet (with skin)	LPR8-CCFT-Ind121
Carp	Fillet (with skin)	LPR8-CCFT-Ind131
Carp	Fillet (with skin)	LPR4-CCFT-Ind155
Carp	Fillet (with skin)	LPR4-CCFT-Ind156
Carp	Fillet (with skin)	LPR5-CCFT-Ind181
Carp	Fillet (with skin)	LPR5-CCFT-Ind184
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Rinsate Blank		LPR-062910-RB
Rinsate Blank White perch	Carcass	LPR-062910-RB LPR1-MACT-Ind145
Rinsate Blank White perch White perch	Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06
Rinsate Blank White perch White perch White perch	Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp09
Rinsate Blank White perch White perch White perch White perch	Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp09 LPR3-MAWB-Comp10
Rinsate Blank White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp09 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11
Rinsate Blank White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12
Rinsate Blank White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp09 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123 LPR7-MAWB-Comp25
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123 LPR7-MAWB-Ind128
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123 LPR7-MAWB-Ind128 LPR6-MAWB-Ind128
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123 LPR7-MAWB-Ind128
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123 LPR7-MAWB-Ind128 LPR6-MAWB-Ind128
Rinsate Blank White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch White perch	Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body Whole body	LPR-062910-RB LPR1-MACT-Ind145 LPR3-MAWB-Comp06 LPR3-MAWB-Comp09 LPR3-MAWB-Comp10 LPR3-MAWB-Comp11 LPR3-MAWB-Comp12 LPR3-MAWB-Comp30 LPR7-MAWB-Ind123 LPR7-MAWB-Ind123 LPR6-MAWB-Ind128 LPR1-MAWB-Ind138 LPR2-MAWB-Ind158

White perch	Whole body	LPR4-MAWB-Comp14
White perch	Whole body	LPR5-MAWB-Comp19
White perch	Whole body	LPR5-MAWB-Comp18
White perch	Whole body	LPR5-MAWB-Comp23
White perch	Whole body	LPR4-MAWB-Comp15
White perch	Fillet (with skin)	LPR3-MAFT-Comp02
White perch	Fillet (with skin)	LPR3-MAFT-Comp03
White perch	Fillet (with skin)	LPR3-MAFT-Comp04
White perch	Fillet (with skin)	LPR3-MAFT-Comp05
White perch	Fillet (with skin)	LPR3-MAFT-Comp07
White perch	Fillet (with skin)	LPR3-MAFT-Comp08
White perch	Fillet (with skin)	LPR3-MAFT-Comp13
White perch	Fillet (with skin)	LPR6-MAFT-Comp24
White perch	Fillet (with skin)	LPR6-MAFT-Ind122
White perch	Fillet (with skin)	LPR1-MAFT-Comp01
White perch	Fillet (with skin)	LPR8-MAFT-Comp26
White perch	Fillet (with skin)	LPR8-MAFT-Comp31
White perch	Fillet (with skin)	LPR8-MAFT-Comp27
White perch	Fillet (with skin)	LPR5-MAFT-Comp20
White perch	Fillet (with skin)	LPR5-MAFT-Comp21
White perch	Fillet (with skin)	LPR5-MAFT-Comp22
White perch	Fillet (with skin)	LPR4-MAFT-Comp16
White perch	Fillet (with skin)	LPR4-MAFT-Comp17
White perch	Fillet (with skin)	LPR1-MAFT-Ind145
Rinsate Blank		LPR-071310-RB
White catfish	Carcass	LPR5-ACCT-Ind006
White catfish	Carcass	LPR6-ACCT-Ind008
White catfish	Carcass	LPR6-ACCT-Ind009
White catfish	Carcass	LPR6-ACCT-Ind010
White catfish	Carcass	LPR6-ACCT-Ind013
White catfish	Carcass	LPR7-ACCT-Ind014
White catfish	Carcass	LPR6-ACCT-Ind016
White catfish	Carcass	LPR7-ACCT-Ind017
White catfish	Carcass	LPR2-ACCT-Ind018
White catfish	Carcass	LPR8-ACCT-Ind019

White catfish	Carcass	LPR8-ACCT-Ind020
White catfish	Carcass	LPR8-ACCT-Ind021
White catfish	Carcass	LPR8-ACCT-Ind022
White catfish	Carcass	LPR4-ACCT-Ind023
White catfish	Carcass	LPR5-ACCT-Ind024
White sucker	Carcass	LPR8-WSCT-Ind009
White sucker	Carcass	LPR8-WSCT-Ind013
White sucker	Carcass	LPR5-WSCT-Ind019
White sucker	Carcass	LPR5-WSCT-Ind020
White sucker	Carcass	LPR4-WSCT-Ind023
Channel catfish	Carcass	LPR5-IPCT-Ind001
Channel catfish	Carcass	LPR6-IPCT-Ind003
Channel catfish	Carcass	LPR6-IPCT-Ind004
Channel catfish	Carcass	LPR7-IPCT-Ind005
Channel catfish	Carcass	LPR7-IPCT-Ind006
Channel catfish	Carcass	LPR8-IPCT-Ind008
Channel catfish	Carcass	LPR8-IPCT-Ind009
Channel catfish	Carcass	LPR8-IPCT-Ind010
Channel catfish	Carcass	LPR8-IPCT-Ind011
Channel catfish	Carcass	LPR8-IPCT-Ind012
Channel catfish	Carcass	LPR8-IPCT-Ind013
White catfish	Carcass	LPR3-ACCT-Ind001
White catfish	Carcass	LPR3-ACCT-Ind002
White catfish	Carcass	LPR3-ACCT-Ind003
White catfish	Carcass	LPR3-ACCT-Ind005
White catfish	Fillet (skinless)	LPR5-ACFT-Ind006
White catfish	Fillet (skinless)	LPR6-ACFT-Ind008
White catfish	Fillet (skinless)	LPR6-ACFT-Ind009
White catfish	Fillet (skinless)	LPR6-ACFT-Ind010
White catfish	Fillet (skinless)	LPR6-ACFT-Ind013
White catfish	Fillet (skinless)	LPR7-ACFT-Ind014
White catfish	Fillet (skinless)	LPR6-ACFT-Ind016
White catfish	Fillet (skinless)	LPR7-ACFT-Ind017
White catfish	Fillet (skinless)	LPR2-ACFT-Ind018
White catfish	Fillet (skinless)	LPR8-ACFT-Ind019

White catfish	Fillet (skinless)	LPR8-ACFT-Ind020
White catfish	Fillet (skinless)	LPR8-ACFT-Ind021
White catfish	Fillet (skinless)	LPR8-ACFT-Ind022
White catfish	Fillet (skinless)	LPR4-ACFT-Ind023
White catfish	Fillet (skinless)	LPR5-ACFT-Ind024
White sucker	Fillet (with skin)	LPR8-WSFT-Ind009
White sucker	Fillet (with skin)	LPR8-WSFT-Ind013
White sucker	Fillet (with skin)	LPR5-WSFT-Ind019
White sucker	Fillet (with skin)	LPR5-WSFT-Ind020
White sucker	Fillet (with skin)	LPR4-WSFT-Ind023
Channel catfish	Fillet (skinless)	LPR5-IPFT-Ind001
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind003
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind004
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind005
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind006
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind008
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind009
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind010
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind011
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind012
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind013
White catfish	Fillet (skinless)	LPR3-ACFT-Ind001
White catfish	Fillet (skinless)	LPR3-ACFT-Ind002
White catfish	Fillet (skinless)	LPR3-ACFT-Ind003
White catfish	Fillet (skinless)	LPR3-ACFT-Ind005
Rinsate Blank		LPR-071910-RB
American eel	Fillet (skinless)	LPR3-ARFT-Comp20
American eel	Fillet (skinless)	LPR3-ARFT-Comp06
American eel	Fillet (skinless)	LPR3-ARFT-Ind005
American eel	Fillet (skinless)	LPR3-ARFT-Comp05
American eel	Fillet (skinless)	LPR3-ARFT-Ind010
American eel	Fillet (skinless)	LPR3-ARFT-Ind014
American eel	Fillet (skinless)	LPR5-ARFT-Comp09
American eel	Fillet (skinless)	LPR5-ARFT-Ind021
American eel	Fillet (skinless)	LPR4-ARFT-Ind022

American eel	Fillet (skinless)	LPR4-ARFT-Ind026
American eel	Fillet (skinless)	LPR5-ARFT-Comp12
American eel	Fillet (skinless)	LPR5-ARFT-Ind030
American eel	Fillet (skinless)	LPR4-ARFT-Comp07
American eel	Fillet (skinless)	LPR4-ARFT-Ind034
American eel	Fillet (skinless)	LPR5-ARFT-Comp10
American eel	Fillet (skinless)	LPR5-ARFT-Ind040
American eel	Fillet (skinless)	LPR4-ARFT-Comp08
American eel	Fillet (skinless)	LPR4-ARFT-Ind044
American eel	Fillet (skinless)	LPR5-ARFT-Ind049
American eel	Fillet (skinless)	LPR5-ARFT-Ind048
American eel	Fillet (skinless)	LPR6-ARFT-Ind065
American eel	Fillet (skinless)	LPR7-ARFT-Ind071
American eel	Fillet (skinless)	LPR6-ARFT-Ind073
American eel	Fillet (skinless)	LPR1-ARFT-Comp01
American eel	Fillet (skinless)	LPR1-ARFT-Comp02
American eel	Fillet (skinless)	LPR5-ARFT-Ind086
American eel	Fillet (skinless)	LPR8-ARFT-Comp17
American eel	Fillet (skinless)	LPR8-ARFT-Comp21
American eel	Fillet (skinless)	LPR8-ARFT-Comp22
American eel	Fillet (skinless)	LPR8-ARFT-Comp14
American eel	Fillet (skinless)	LPR2-ARFT-Comp04
American eel	Fillet (skinless)	LPR1-ARFT-Ind085
American eel	Carcass	LPR2-ARCT-Comp04
American eel	Carcass	LPR1-ARCT-Ind085
American eel	Whole body	LPR3-ARWB-Ind001
American eel	Whole body	LPR3-ARWB-Ind009
American eel	Whole body	LPR3-ARWB-Ind012
American eel	Whole body	LPR4-ARWB-Ind024
American eel	Whole body	LPR4-ARWB-Ind025
American eel	Whole body	LPR5-ARWB-Ind039
American eel	Whole body	LPR4-ARWB-Ind043
American eel	Whole body	LPR5-ARWB-Comp11
American eel	Whole body	LPR4-ARWB-Ind060
American eel	Whole body	LPR5-ARWB-Ind062

American eel	Whole body	LPR7-ARWB-Ind070
American eel	Whole body	LPR6-ARWB-Ind069
American eel	Whole body	LPR6-ARWB-Ind074
American eel	Whole body	LPR1-ARWB-Comp03
American eel	Whole body	LPR8-ARWB-Comp16
American eel	Whole body	LPR8-ARWB-Comp15
American eel	Whole body	LPR8-ARWB-Comp18
American eel	Whole body	LPR8-ARWB-Comp13
American eel	Whole body	LPR8-ARWB-Comp19



SDG	Lab ID	Lipids (Bligh- Dyer)	Butyltins (Krone)	Metals (ICP,6010B)	Metals (ICP/MS, 6020)	Metals (Se, 7742)
K1002762	K1002762-001	x	X	x	X	X
K1002762	K1002762-002	x	Х	x	X	X
K1002762	K1002762-003	X	х	X	X	X
K1002762	K1002762-004	X	X	x	X	X
K1002762	K1002762-005	X	Х	X	X	Х
K1002762	K1002762-006	X	Х	X	X	Х
K1002762	K1002762-007	X	Х	X	X	Х
K1002762	K1002762-008	X	х	X	X	Х
K1002762	K1002762-009	X	х	X	X	X
K1002762	K1002762-010	X	х	X	X	Х
K1002762	K1002762-011	X	х	X	X	X
K1002762	K1002762-012	X	X	x	X	X
K1002762	K1002762-013	X	Х	X	X	X
K1002762	K1002762-014	X	X	x	X	X
K1002762	K1002762-015	X	X	x	X	X
K1002762	K1002762-016	X	X	x	X	X
K1002762	K1002762-017	X	X	x	X	X
K1002762	K1002762-018	X	X	X	X	X
K1002762	K1002762-019	X	X	X	X	X
K1002762	K1002762-020	X	X	X	X	X
K1002762	K1002762-021	X	X	X	X	X
K1002794	K1002794_001		Х	x	x	X
K1002794	K1002794_002		X	X	X	X
K1003359	K1003359_001	x	Х	x	х	x
K1003359	K1003359_002	X	Х	X	X	Х
K1003359	K1003359_003	x	Х	Χ	X	Х
K1003359	K1003359_004	X	Х	Χ	X	Х
K1003359	K1003359_005	x	X	Χ	X	X
K1003359	K1003359_006	X	Х	X	X	x

K1003359	K1003359_007	Х	Х	X	Х	х
K1003359	K1003359_008	Х	X	Х	X	х
K1003359	K1003359_009	Х	X	X	Х	х
K1003359	K1003359_010	Χ	X	X	X	Х
K1003359	K1003359_011	Χ	X	X	X	Х
K1003359	K1003359_012	Χ	X	X	X	Х
K1003359	K1003359_013	Χ	X	X	X	Х
K1003359	K1003359_014	X	X	X	X	Х
K1003359	K1003359_015	X	X	X	X	Х
K1003359	K1003359_016	X	X	X	X	Х
K1003359	K1003359_017	Χ	X	X	X	Х
K1003359	K1003359_018	X	X	X	X	Х
K1003359	K1003359_019	X	X	X	X	Х
K1003359	K1003359_020	Χ	X	X	X	Х
K1003357	K1003357_001	Χ	X	Χ	Χ	Х
K1003357	K1003357_002	Χ	X	Χ	Χ	Х
K1003357	K1003357_003	Χ	X	X	X	Х
K1003357	K1003357_004	X	X	Х	X	х
K1003357	K1003357_005	Χ	X	Χ	Χ	Х
K1003357	K1003357_006	Χ	X	Χ	Χ	Х
K1003357	K1003357_007	X	X	Х	Χ	Х
K1003357	K1003357_008	Χ	Χ	Χ	Χ	Х
K1003357	K1003357_009	Χ	X	X	X	Х
K1003357	K1003357_010	Χ	X	X	X	Х
K1003357	K1003357_011	Χ	X	X	X	Х
K1003357	K1003357_012	Χ	X	Χ	Χ	Х
K1003357	K1003357_013	Χ	Χ	Χ	Χ	Х
K1003357	K1003357_014	Χ	Χ	Χ	Χ	Х
K1003357	K1003357_015	Χ	X	Χ	Χ	Х
K1003357	K1003357_016	Χ	X	Χ	Χ	Х
K1003357	K1003357_017	Χ	X	X	X	Х
K1003357	K1003357_018	X	X	X	X	x
K1003357	K1003357_019	X	Χ	Χ	X	х
K1003357	K1003357_020	X	Χ	Χ	X	х
K1003357	K1003357_021	X	Χ	Χ	X	х
K1003357	K1003357_022	X	X	X	X	х

K1003357	K1003357_023	X	Х	X	Х	Х
K1003357	K1003357_024	Х	X	X	Х	х
K1003612	K1003612-001	Х	X	X	Х	х
K1003612	K1003612-002	X	X	X	Х	х
K1003612	K1003612-003	X	X	X	Х	х
K1003612	K1003612-004	Х	X	X	Х	х
K1003612	K1003612-005	Х	Х	X	Х	х
K1003612	K1003612-006	Х	Х	X	Х	х
K1003612	K1003612-007	Х	Х	Х	Х	х
K1003612	K1003612-008	Х	Х	Х	Х	х
K1003612	K1003612-009	Х	Х	Х	Х	х
K1003612	K1003612-010	X	X	Х	Х	X
K1003612	K1003612-011	X	X	X	Χ	х
K1003612	K1003612-012	X	X	Х	X	Х
K1003612	K1003612-013	X	X	Х	Х	х
K1003612	K1003612-014	X	X	X	X	х
K1003612	K1003612-015	X	X	X	X	х
K1003612	K1003612-016	X	X	X	X	х
K1003612	K1003612-017	X	X	X	X	х
K1003612	K1003612-018	X	X	X	X	х
K1003612	K1003612-019	Х	X	X	Х	х
K1003612	K1003612-020	X	X	X	X	х
K1003612	K1003612-021	X	X	X	X	х
K1003611	K1003611-001	Χ	Χ	Χ	Χ	Х
K1003611	K1003611-002	Χ	Χ	Χ	Χ	Х
K1003611	K1003611-003	Χ	X	Х	X	х
K1003611	K1003611-004	X	Χ	Х	X	х
K1003611	K1003611-005	Χ	X	Х	X	х
K1003611	K1003611-006	Χ	X	X	Χ	Х
K1003611	K1003611-007	Χ	X	Х	X	х
K1006040	K1006040-001	X				
K1006040	K1006040-002	X				
K1006040	K1006040-003	X				
K1006040	K1006040-004	X				

K1006040	K1006040-005	X				
K1006040	K1006040-006	Χ				
K1006040	K1006040-007	Χ				
K1006040	K1006040-008	X				
K1006040	K1006040-009	Х				
K1006040	K1006040-010	X				
K1006037	K1006037-001	X	Χ	X	X	X
K1006037	K1006037-002	Χ	x	X	X	X
K1006037	K1006037-003	X	X	X	X	X
K1006037	K1006037-004	X	X	X	X	X
K1006037	K1006037-005	X	Χ	X	X	X
K1006037	K1006037-006	Χ	x	X	X	X
K1006037	K1006037-007	X	X	X	X	X
K1006037	K1006037-008	X	X	X	X	X
K1006037	K1006037-009	X	X	X	X	X
K1006037	K1006037-010	Χ	Χ	Χ	X	X
K1006037	K1006037-011	Χ	Χ	Χ	Χ	X
K1006037	K1006037-012	Χ	Χ	Χ	X	X
K1006037	K1006037-013	Χ	Χ	Χ	X	X
K1006037	K1006037-014	Χ	Χ	Χ	X	X
K1006240	K1006240_001		Χ	Χ	X	X
K1006240	K1006240_002	Χ	Χ	Χ	X	X
K1006240	K1006240_003	Χ	Χ	Χ	X	X
K1006240	K1006240_004	Χ	Χ	Χ	X	X
K1006240	K1006240_005	X	X	X	X	X
K1006240	K1006240_006	Χ	Χ	Χ	X	X
K1006240	K1006240_007	Χ	Χ	Χ	X	X
K1006240	K1006240_008	Χ	Χ	X	X	X
K1006240	K1006240_009	Χ	Χ	X	X	X
K1006240	K1006240_010	Χ	Χ	X	X	X
K1006240	K1006240_011	X	X	X	X	X
K1006240	K1006240_012	X	X	X	X	X
K1006240	K1006240_013	X	X	X	X	X
K1006240	K1006240_014	X	X	X	X	X
K1006240	K1006240_015	Χ	Χ	X	X	X

K1006240	K1006240_016	х	Х	X	Х	x
K1006240	K1006240_017	X	Х	X	X	X
K1006240	K1006240_018	X	Х	X	X	X
K1006240	K1006240_019	X	Χ	X	X	X
K1006286	K1006286_01	X	Χ	X	Χ	Х
K1006286	K1006286_02	X	Χ	X	Χ	Х
K1006286	K1006286_03	X	Χ	X	Χ	X
K1006286	K1006286_04	X	Χ	X	Χ	X
K1006286	K1006286_05	Х	X	X	X	X
K1006286	K1006286_06	Х	Χ	X	Χ	X
K1006286	K1006286_07	Х	X	X	X	X
K1006286	K1006286_08	Х	X	X	X	X
K1006286	K1006286_09	Х	X	X	Χ	X
K1006286	K1006286_10	Х	Χ	X	Χ	X
K1006286	K1006286_11	Х	Χ	X	Χ	X
K1006286	K1006286_12	X	X	X	Χ	X
K1005940	K1005940_001		Χ	X	Χ	Х
K1006741	K1006741-001		Х	X	X	Х
K1007274	K1007274-001	Х	Х	X	Χ	Х
K1007274	K1007274-002	Х	Х	X	Х	Х
K1007274	K1007274-003	Х	Х	X	Χ	Х
K1007274	K1007274-004	Х	Х	X	Х	Х
K1007274	K1007274-005	Х	Х	X	Х	Х
K1007274	K1007274-006	Х	Х	X	Χ	Х
K1007274	K1007274-007	Х	Х	X	Х	Х
K1007274	K1007274-008	X	Χ	X	Х	Х
K1007274	K1007274-009	X	Χ	X	Х	Х
K1007274	K1007274-010	X	Χ	X	Х	Х
K1007274	K1007274-011	Х	Х	Χ	Х	Х
K1007274	K1007274-012	X	Χ	X	Х	Х
K1007274	K1007274-013	X	Χ	X	Х	Х
K1007274	K1007274-014	Х	Х	Χ	Х	Х
K1007274	K1007274-015	Χ	X	X	X	Х

K1007274	K1007274-016	X	Х	X	Х	Х
K1007274	K1007274-017	X	Χ	X	X	X
K1007274	K1007274-018	Х	Х	X	X	X
K1007274	K1007274-019	X	Χ	X	X	X
K1007274	K1007274-020	X	X	X	X	X
K1007273	K1007273-001	X	Χ	X	X	X
K1007273	K1007273-002	Χ	X	Χ	X	X
K1007273	K1007273-003	X	X	X	X	X
K1007273	K1007273-004	X	Χ	X	X	X
K1007273	K1007273-005	X	X	Χ	X	X
K1007273	K1007273-006	Χ	X	Χ	X	X
K1007273	K1007273-007	X	X	Χ	X	X
K1007273	K1007273-008	Χ	Χ	Χ	X	X
K1007273	K1007273-009	X	X	Χ	X	X
K1007273	K1007273-010	Χ	Χ	Χ	Χ	X
K1007273	K1007273-011	Χ	Χ	Χ	X	X
K1007273	K1007273-012	X	X	Χ	X	X
K1007273	K1007273-013	Χ	Χ	Χ	Χ	X
K1007273	K1007273-014	X	X	Χ	X	X
K1007273	K1007273-015	X	X	Χ	X	X
K1007273	K1007273-016	X	X	Χ	X	X
K1007273	K1007273-017	X	X	Χ	X	X
K1007273	K1007273-018	Χ	Χ	Χ	Χ	X
K1007273	K1007273-019	X	X	Χ	X	X
K1007273	K1007273-020		X	X	X	X
K1007105	K1007105-001	Χ	Χ	Χ	X	X
K1007105	K1007105-002	X	X	Χ	X	X
K1007105	K1007105-003	Χ	Χ	Χ	X	X
K1007105	K1007105-004	Χ	Χ	X	X	X
K1007105	K1007105-005	Χ	Χ	Χ	Χ	X
K1007105	K1007105-006	X	X	X	Χ	Χ
K1007105	K1007105-007	X	X	X	Χ	Χ
K1007105	K1007105-008	X	X	X	Χ	Χ
K1007105	K1007105-009	X	X	X	Χ	Χ
K1007105	K1007105-010	X	X	X	Χ	Χ

K1007105	K1007105-011	x	X	X	X	х
K1007105	K1007105-012	X	X	X	X	X
K1007105	K1007105-013	X	X	X	X	X
K1007105	K1007105-014	X	X	Χ	X	X
K1007105	K1007105-015	Χ	Χ	Χ	Χ	X
K1007103	K1007103-001	Χ	Χ	Χ	Χ	X
K1007103	K1007103-002	Χ	Χ	Χ	Χ	X
K1007103	K1007103-003	Χ	Χ	Χ	Χ	X
K1007103	K1007103-004	Χ	Χ	Χ	Χ	X
K1007103	K1007103-005	Χ	Χ	Χ	Χ	X
K1007103	K1007103-006	Χ	Χ	Χ	Χ	X
K1007103	K1007103-007	Χ	Χ	Χ	Χ	X
K1007103	K1007103-008	Χ	Χ	Χ	Χ	X
K1007103	K1007103-009	Χ	Χ	Χ	Χ	X
K1007103	K1007103-010	Χ	Χ	Χ	Χ	X
K1007103	K1007103-011	Χ	Χ	Χ	Χ	X
K1007103	K1007103-012	X	X	Χ	X	X
K1007103	K1007103-013	Χ	Χ	Χ	Χ	X
K1007103	K1007103-014	Χ	Χ	Χ	Χ	Χ
K1007103	K1007103-015	X	X	Χ	X	X
K1007103	K1007103-016	Χ	Χ	Χ	Χ	X
K1007103	K1007103-017	X	X	Χ	X	X
K1007103	K1007103-018	X	X	X	X	X
K1007103	K1007103-019	X	X	X	X	X
K1007103	K1007103-020	X	X	X	X	X
K1007102	K1007102-001	X	X	X	X	X
K1007102	K1007102-002	X	X	X	X	X
K1007102	K1007102-003	X	X	X	X	X
K1007102	K1007102-004	X	X	Χ	X	X
K1007102	K1007102-005	X	X	X	X	X
K1007102	K1007102-006	X	X	X	X	X
K1007102	K1007102-007	X	X	X	X	X
K1007102	K1007102-008	X	X	X	X	X
K1007102	K1007102-009	X	X	X	X	X
K1007102	K1007102-010	X	X	X	X	X

K1007102	K1007102-011	X	Х	Х	X	Χ
K1007102	K1007102-012	Χ	Χ	X	X	X
K1007102	K1007102-013	Χ	х	X	х	X
K1007102	K1007102-014	Χ	х	X	х	X
K1007102	K1007102-015	Χ	Χ	X	X	X
K1007100	K1007100-001	Χ	х	X	х	X
K1007100	K1007100-002	Χ	х	X	х	X
K1007100	K1007100-003	Χ	х	X	х	X
K1007100	K1007100-004	Χ	Χ	X	X	X
K1007100	K1007100-005	X	x	X	X	Χ
K1007100	K1007100-006	X	x	X	X	Χ
K1007100	K1007100-007	X	x	X	X	Χ
K1007100	K1007100-008	X	X	X	X	X
K1007100	K1007100-009	X	X	X	X	X
K1007100	K1007100-010	X	X	X	X	X
K1007100	K1007100-011	Χ	X	Χ	X	X
K1007100	K1007100-012	X	X	X	X	X
K1007100	K1007100-013	X	X	Χ	X	X
K1007100	K1007100-014	X	X	Χ	X	X
K1007100	K1007100-015	X	X	Χ	X	X
K1007100	K1007100-016	X	X	Χ	X	X
K1007100	K1007100-017	X	X	X	X	X
K1007100	K1007100-018	X	X	Χ	X	X
K1007100	K1007100-019	Χ	X	Χ	X	X
K1007100	K1007100-020	Χ	X	Χ	X	X
K1007457	K1007457-001	Χ	Χ	Χ	Χ	Χ
K1007457	K1007457-002	Χ	Χ	Χ	X	Χ
K1007457	K1007457-003	Χ	Χ	Χ	X	Χ
K1007457	K1007457-004	Χ	Χ	Χ	X	Χ
K1007457	K1007457-005	Χ	X	Χ	X	X
K1007457	K1007457-006	X	X	X	X	X
K1007457	K1007457-007	X	X	X	X	X
K1007457	K1007457-008	X	X	X	X	X
K1007457	K1007457-009	X	X	X	X	X
K1007457	K1007457-010	X	Χ	X	Х	Х

K1007457	K1007457-011	х	х	X	X	х
K1007457	K1007457-012	X	x	X	X	X
K1007457	K1007457-013	X	x	X	X	X
K1007457	K1007457-014	X	X	X	X	X
K1007457	K1007457-015	Χ	X	Χ	X	X
K1007457	K1007457-016	X	X	Χ	Χ	X
K1007457	K1007457-017	Χ	X	Χ	X	X
K1007457	K1007457-018	Χ	Χ	Χ	Χ	X
K1007457	K1007457-019	Χ	Χ	Χ	Χ	X
K1007457	K1007457-020	Χ	Χ	Χ	Χ	X
K1007620	K1007620-001	X	X	X	Χ	X
K1007620	K1007620-002	X	X	Χ	Χ	Χ
K1007620	K1007620-003	X	X	Χ	X	X
K1007620	K1007620-004	X	X	Χ	X	X
K1007620	K1007620-005	X	X	Χ	X	X
K1007620	K1007620-006	X	X	X	X	X
K1007620	K1007620-007	X	X	Χ	X	X
K1007620	K1007620-008	X	X	X	X	X
K1007620	K1007620-009	X	X	Χ	X	X
K1007620	K1007620-010	X	X	Χ	X	X
K1007620	K1007620-011	X	X	X	X	X
K1007620	K1007620-012	X	X	Χ	Χ	Χ
K1007620	K1007620-013	X	X	Χ	X	X
K1007620	K1007620-014	X	X	X	X	X
K1007620	K1007620-015	X	X	Χ	Χ	Χ
K1007620	K1007620-016	X	X	Χ	X	X
K1007620	K1007620-017	X	X	Χ	Χ	X
K1007620	K1007620-018	X	X	Χ	X	X
K1007620	K1007620-019	X	X	X	X	X
K1007620	K1007620-020	X	X	Χ	Χ	X
K1007621	K1007621-001	X	Χ	X	Χ	Χ
K1007621	K1007621-002	X	Χ	X	Χ	X
K1007621	K1007621-003	X	Χ	X	Χ	Χ
K1007621	K1007621-004	X	Χ	X	Χ	Χ
K1007621	K1007621-005	X	Χ	X	X	X

K1007621	K1007621-006	Χ	X	X	Х	Χ
K1007621	K1007621-007	X	X	X	X	X
K1007621	K1007621-008	X	X	X	X	X
K1007621	K1007621-009	X	X	X	X	X
K1007621	K1007621-010	X	X	X	X	X
K1007621	K1007621-011	X	X	X	X	X
K1007621	K1007621-012	X	X	X	X	X
K1007621	K1007621-013	X	X	X	X	X
K1007621	K1007621-014	X	X	X	X	X

2009 Fish and Blue Crab Tissue Chemistry Data for the LPRSA Appendix D

Table D-5. 2009 SDGs, sample IDs, and analyses - Maxxam Analytics

FINAL

Species	Tissue Type	LPR ID
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp37
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp38
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp31
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp41
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp42
Blue Crab	Muscle/hepatopancreas	LPR6-CSMH-Comp44
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp45
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp46
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp49
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp53
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp61
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp48
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp54
Blue Crab	Muscle/hepatopancreas	LPR7-CSMH-Comp50
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp55
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp56
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp57
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp01
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp02
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp03
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp04
Rinsate Blank		LPR-032310-RB
Blue Crab	Muscle/hepatopancreas	LPR8-CSMH-Comp58
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp06
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp07
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp11
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp30
Blue Crab	Muscle/hepatopancreas	LPR1-CSMH-Comp13
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp14
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp17
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp15
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp18

Blue Crab	Muselo/honatonaneroas	LPR2-CSMH-Comp19
Blue Crab	Muscle/hepatopancreas	·
Blue Crab	Muscle/hepatopancreas	LPR2-CSMH-Comp20
	Muscle/hepatopancreas	LPR3-CSMH-Comp24
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp34
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp26
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp32
Blue Crab	Muscle/hepatopancreas	LPR4-CSMH-Comp33
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp27
Blue Crab	Muscle/hepatopancreas	LPR3-CSMH-Comp28
Blue Crab	Muscle/hepatopancreas	LPR5-CSMH-Comp35
Blue Crab	Carcass	LPR4-CSCT-Comp31
Blue Crab	Carcass	LPR1-CSCT-Comp01
Blue Crab	Carcass	LPR1-CSCT-Comp02
Blue Crab	Carcass	LPR1-CSCT-Comp03
Blue Crab	Carcass	LPR1-CSCT-Comp04
Blue Crab	Carcass	LPR1-CSCT-Comp06
		•
Blue Crab	Carcass	LPR1-CSCT-Comp07
Blue Crab	Carcass	LPR1-CSCT-Comp11
Blue Crab	Carcass	LPR4-CSCT-Comp30
Blue Crab	Carcass	LPR1-CSCT-Comp13
Blue Crab	Carcass	LPR2-CSCT-Comp14
Blue Crab	Carcass	LPR2-CSCT-Comp17
Blue Crab	Carcass	LPR2-CSCT-Comp15
Blue Crab	Carcass	LPR2-CSCT-Comp18
Blue Crab	Carcass	LPR2-CSCT-Comp19
Blue Crab	Carcass	LPR2-CSCT-Comp20
Blue Crab	Carcass	LPR3-CSCT-Comp24
Blue Crab	Carcass	LPR5-CSCT-Comp34
Blue Crab	Carcass	LPR3-CSCT-Comp26
Blue Crab	Carcass	LPR4-CSCT-Comp32
Blue Crab	Carcass	LPR4-CSCT-Comp33
Blue Crab	Carcass	LPR3-CSCT-Comp27
Blue Crab	Carcass	LPR3-CSCT-Comp28
Blue Crab	Carcass	LPR5-CSCT-Comp35
Divis Crab	Mugglassalu	LDD7 COMT Commen
Blue Crab	Muscle only	LPR7-CSMT-Comp52
Blue Crab	Muscle only	LPR1-CSMT-Comp08
Blue Crab	Muscle only	LPR1-CSMT-Comp10
Blue Crab	Muscle only	LPR1-CSMT-Comp12

Blue Crab	Muscle only	LPR2-CSMT-Comp16
Blue Crab	Muscle only	LPR6-CSMT-Comp39
Blue Crab	Muscle only	LPR2-CSMT-Comp22
Blue Crab	Muscle only	LPR2-CSMT-Comp23
Blue Crab	Muscle only	LPR6-CSMT-Comp40
Blue Crab	Muscle only	LPR3-CSMT-Comp25
Blue Crab	Muscle only	LPR6-CSMT-Comp43
Blue Crab	Muscle only	LPR3-CSMT-Comp29
Blue Crab	Muscle only	LPR5-CSMT-Comp36
Blue Crab	Muscle only	LPR7-CSMT-Comp47
Blue Crab	Muscle only	LPR7-CSMT-Comp51
Blue Crab	Muscle only	LPR8-CSMT-Comp59
Blue Crab	Muscle only	LPR8-CSMT-Comp60
Blue Crab	Muscle only	LPR8-CSMT-Comp62
Blue Crab	Muscle only	LPR1-CSMT-Comp05
Blue Crab	Muscle only	LPR1-CSMT-Comp09
Blue Crab	Muscle only	LPR2-CSMT-Comp21
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp05
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp63
Blue Crab	Hepatopancreas only	LPR1-CSHT-Comp09
Blue Crab	Hepatopancreas only	LPR3-CSHT-Comp64
Blue Crab	Hepatopancreas only	LPR2-CSHT-Comp21
Blue Crab	Hepatopancreas only	LPRX-CSHT-Comp65
Blue Crab	Hepatopancreas only	LPR8-CSHT-Comp66
Rinsate Blank		LPR-041210-RB
Northern pike	Fillet (with skin)	LPR6-ELFT-Ind001
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Comp01
Largemouth bass	Fillet (with skin)	LPR8-MSFT-Ind002
Largemouth bass	Fillet (with skin)	LPR5-MSFT-Ind009
Smallmouth bass	Fillet (with skin)	LPR4-MDFT-Comp01
Smallmouth bass	Fillet (with skin)	LPR5-MDFT-Comp02
Smallmouth bass	Fillet (with skin)	LPR8-MDFT-Comp03
Northern pike	Carcass	LPR6-ELCT-Ind001
Largemouth bass	Carcass	LPR5-MSCT-Comp01
Largemouth bass	Carcass	LPR8-MSCT-Ind002
Largemouth bass	Carcass	LPR5-MSCT-Ind009
Smallmouth bass	Carcass	LPR4-MDCT-Comp01
Smallmouth bass	Carcass	LPR5-MDCT-Comp02

Smallmouth bass	Carcass	LPR8-MDCT-Comp03 LPR-060810-RB
Rinsate Blank		LI 11-0000 10-11D
Carp	Whole body	LPR3-CCWB-Ind002
Carp	Whole body	LPR3-CCWB-Ind005
Carp	Whole body	LPR5-CCWB-Ind011
Carp	Whole body	LPR6-CCWB-Ind021
Carp	Whole body	LPR6-CCWB-Ind028
Carp	Whole body	LPR7-CCWB-Ind042
Carp	Whole body	LPR7-CCWB-Ind069
Carp	Whole body	LPR8-CCWB-Ind139
Carp	Whole body	LPR8-CCWB-Ind147
Carp	Whole body	LPR5-CCWB-Ind160
Carp	Whole body	LPR4-CCWB-Ind175
Carp	Whole body	LPR4-CCWB-Ind186
Brown Bullhead	Whole body	LPR3-ANWB-Ind001
Brown Bullhead	Whole body	LPR6-ANWB-Ind004
Brown Bullhead	Whole body	LPR4-ANWB-Ind007
Brown Bullhead	Whole body	LPR6-ANWB-Ind003
Brown Bullhead	Whole body	LPR6-ANWB-Ind005
Brown Bullhead	Whole body	LPR7-ANWB-Ind006
Rinsate Blank		LPR-061510-RB
Carp	Fillet (with skin)	LPR3-CCFT-Ind001
Carp	Fillet (with skin)	LPR3-CCFT-Ind004
Carp	Fillet (with skin)	LPR6-CCFT-Ind032
Carp	Fillet (with skin)	LPR7-CCFT-Ind068
Carp	Fillet (with skin)	LPR7-CCFT-Ind092
Carp	Fillet (with skin)	LPR6-CCFT-Ind104
Carp	Fillet (with skin)	LPR8-CCFT-Ind121
Carp	Fillet (with skin)	LPR8-CCFT-Ind131
Carp	Fillet (with skin)	LPR4-CCFT-Ind155
Carp	Fillet (with skin)	LPR4-CCFT-Ind156
Carp	Fillet (with skin)	LPR5-CCFT-Ind181
Carp	Fillet (with skin)	LPR5-CCFT-Ind184
Rinsate Blank		LPR-062910-RB
White sucker	Fillet (with skin)	LPR8-WSFT-Ind009
White sucker	Fillet (with skin)	LPR8-WSFT-Ind013

White sucker	Fillet (with skin)	LPR5-WSFT-Ind019
White sucker	Fillet (with skin)	LPR5-WSFT-Ind020
White sucker	Fillet (with skin)	LPR4-WSFT-Ind023
Channel catfish	Fillet (skinless)	LPR5-IPFT-Ind001
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind008
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind009
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind010
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind011
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind012
Channel catfish	Fillet (skinless)	LPR8-IPFT-Ind013
White catfish	Fillet (skinless)	LPR3-ACFT-Ind001
White catfish	Fillet (skinless)	LPR3-ACFT-Ind002
White catfish	Fillet (skinless)	LPR3-ACFT-Ind003
White catfish	Fillet (skinless)	LPR3-ACFT-Ind005
White catfish	Fillet (skinless)	LPR5-ACFT-Ind006
White catfish	Fillet (skinless)	LPR6-ACFT-Ind016
White catfish	Fillet (skinless)	LPR7-ACFT-Ind017
White catfish	Fillet (skinless)	LPR2-ACFT-Ind018
White catfish	Fillet (skinless)	LPR8-ACFT-Ind019
White catfish	Fillet (skinless)	LPR8-ACFT-Ind020
White catfish	Fillet (skinless)	LPR8-ACFT-Ind021
White catfish	Fillet (skinless)	LPR8-ACFT-Ind022
White catfish	Fillet (skinless)	LPR4-ACFT-Ind023
White catfish	Fillet (skinless)	LPR5-ACFT-Ind024
White sucker	Carcass	LPR8-WSCT-Ind009
White sucker	Carcass	LPR8-WSCT-Ind013
White sucker	Carcass	LPR5-WSCT-Ind019
White sucker	Carcass	LPR5-WSCT-Ind020
White sucker	Carcass	LPR4-WSCT-Ind023
Channel catfish	Carcass	LPR5-IPCT-Ind001
Channel catfish	Carcass	LPR6-IPCT-Ind003
Channel catfish	Carcass	LPR8-IPCT-Ind008
Channel catfish	Carcass	LPR8-IPCT-Ind009
Channel catfish	Carcass	LPR8-IPCT-Ind010
Channel catfish	Carcass	LPR8-IPCT-Ind011
Channel catfish	Carcass	LPR8-IPCT-Ind012
Channel catfish	Carcass	LPR8-IPCT-Ind013
White catfish	Carcass	LPR3-ACCT-Ind001
White catfish	Carcass	LPR3-ACCT-Ind002

White catfish	Carcass	LPR3-ACCT-Ind003
White catfish	Carcass	LPR3-ACCT-Ind005
White catfish	Carcass	LPR5-ACCT-Ind006
White catfish	Carcass	LPR6-ACCT-Ind008
White catfish	Carcass	LPR6-ACCT-Ind009
White catfish	Carcass	LPR6-ACCT-Ind016
White catfish	Carcass	LPR7-ACCT-Ind017
White catfish	Carcass	LPR2-ACCT-Ind018
White catfish	Carcass	LPR8-ACCT-Ind019
White catfish	Carcass	LPR8-ACCT-Ind020
White catfish	Carcass	LPR8-ACCT-Ind021
White catfish	Carcass	LPR8-ACCT-Ind022
White catfish	Carcass	LPR4-ACCT-Ind023
White catfish	Carcass	LPR5-ACCT-Ind024
White perch	Fillet (with skin)	LPR3-MAFT-Comp02
White perch	Fillet (with skin)	LPR3-MAFT-Comp03
White perch	Fillet (with skin)	LPR3-MAFT-Comp04
White perch	Fillet (with skin)	LPR3-MAFT-Comp05
White perch	Fillet (with skin)	LPR3-MAFT-Comp07
White perch	Fillet (with skin)	LPR3-MAFT-Comp08
White perch	Fillet (with skin)	LPR3-MAFT-Comp13
White perch	Fillet (with skin)	LPR1-MAFT-Comp01
White perch	Fillet (with skin)	LPR8-MAFT-Comp26
White perch	Fillet (with skin)	LPR8-MAFT-Comp31
White perch	Fillet (with skin)	LPR8-MAFT-Comp27
White perch	Fillet (with skin)	LPR5-MAFT-Comp20
White perch	Fillet (with skin)	LPR5-MAFT-Comp21
White perch	Fillet (with skin)	LPR5-MAFT-Comp22
White perch	Fillet (with skin)	LPR4-MAFT-Comp16
White perch	Fillet (with skin)	LPR4-MAFT-Comp17
White perch	Fillet (with skin)	LPR1-MAFT-Ind145
Rinsate Blank		LPR-071310-RB
White perch	Carcass	LPR1-MACT-Ind145
White perch	Whole body	LPR3-MAWB-Comp06
White perch	Whole body	LPR3-MAWB-Comp09
White perch	Whole body	LPR3-MAWB-Comp10
White perch	Whole body	LPR3-MAWB-Comp11
White perch	Whole body	LPR3-MAWB-Comp12

White perch	Whole body	LPR3-MAWB-Comp30
White perch	Whole body	LPR6-MAWB-Ind128
White perch	Whole body	LPR1-MAWB-Ind138
White perch	Whole body	LPR2-MAWB-Ind158
White perch	Whole body	LPR8-MAWB-Comp32
White perch	Whole body	LPR8-MAWB-Comp28
White perch	Whole body	LPR8-MAWB-Comp29
White perch	Whole body	LPR4-MAWB-Comp14
White perch	Whole body	LPR5-MAWB-Comp19
White perch	Whole body	LPR5-MAWB-Comp18
White perch	Whole body	LPR5-MAWB-Comp23
White perch	Whole body	LPR4-MAWB-Comp15
American eel	Fillet (skinless)	LPR3-ARFT-Comp20
American eel	Fillet (skinless)	LPR3-ARFT-Comp06
American eel	Fillet (skinless)	LPR3-ARFT-Ind005
American eel	Fillet (skinless)	LPR3-ARFT-Comp05
American eel	Fillet (skinless)	LPR3-ARFT-Ind010
American eel	Fillet (skinless)	LPR3-ARFT-Ind014
American eel	Fillet (skinless)	LPR5-ARFT-Comp09
American eel	Fillet (skinless)	LPR5-ARFT-Ind021
American eel	Fillet (skinless)	LPR4-ARFT-Ind022
American eel	Fillet (skinless)	LPR4-ARFT-Ind026
American eel	Fillet (skinless)	LPR5-ARFT-Comp12
American eel	Fillet (skinless)	LPR5-ARFT-Ind030
American eel	Fillet (skinless)	LPR4-ARFT-Comp07
American eel	Fillet (skinless)	LPR4-ARFT-Ind034
American eel	Fillet (skinless)	LPR5-ARFT-Comp10
American eel	Fillet (skinless)	LPR5-ARFT-Ind040
American eel	Fillet (skinless)	LPR4-ARFT-Comp08
American eel	Fillet (skinless)	LPR4-ARFT-Ind044
American eel	Fillet (skinless)	LPR5-ARFT-Ind049
American eel	Fillet (skinless)	LPR5-ARFT-Ind048
American eel	Fillet (skinless)	LPR7-ARFT-Ind071
American eel	Fillet (skinless)	LPR6-ARFT-Ind073
American eel	Fillet (skinless)	LPR1-ARFT-Comp01
American eel	Fillet (skinless)	LPR1-ARFT-Comp02
American eel	Fillet (skinless)	LPR5-ARFT-Ind086
American eel	Fillet (skinless)	LPR8-ARFT-Comp17
American eel	Fillet (skinless)	LPR8-ARFT-Comp21

American eel	Fillet (skinless)	LPR8-ARFT-Comp22
American eel	Fillet (skinless)	LPR8-ARFT-Comp14
American eel	Fillet (skinless)	LPR2-ARFT-Comp04
American eel	Fillet (skinless)	LPR1-ARFT-Ind085
American eel	Carcass	LPR2-ARCT-Comp04
American eel	Carcass	LPR1-ARCT-Ind085
American eel	Whole body	LPR3-ARWB-Ind001
American eel	Whole body	LPR3-ARWB-Ind009
American eel	Whole body	LPR3-ARWB-Ind012
American eel	Whole body	LPR4-ARWB-Ind024
American eel	Whole body	LPR4-ARWB-Ind025
American eel	Whole body	LPR5-ARWB-Ind039
American eel	Whole body	LPR4-ARWB-Ind043
American eel	Whole body	LPR5-ARWB-Comp11
American eel	Whole body	LPR4-ARWB-Ind060
American eel	Whole body	LPR5-ARWB-Ind062
American eel	Whole body	LPR7-ARWB-Ind070
American eel	Whole body	LPR6-ARWB-Ind069
American eel	Whole body	LPR6-ARWB-Ind074
American eel	Whole body	LPR1-ARWB-Comp03
American eel	Whole body	LPR8-ARWB-Comp16
American eel	Whole body	LPR8-ARWB-Comp15
American eel	Whole body	LPR8-ARWB-Comp18
American eel	Whole body	LPR8-ARWB-Comp13
American eel	Whole body	LPR8-ARWB-Comp19
Rinsate Blank		LPR-071910-RB
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind003
Channel catfish	Fillet (skinless)	LPR6-IPFT-Ind004
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind005
Channel catfish	Fillet (skinless)	LPR7-IPFT-Ind006
White catfish	Fillet (skinless)	LPR6-ACFT-Ind008
White catfish	Fillet (skinless)	LPR6-ACFT-Ind009
White catfish	Fillet (skinless)	LPR6-ACFT-Ind010
White catfish	Fillet (skinless)	LPR6-ACFT-Ind013
White catfish	Fillet (skinless)	LPR7-ACFT-Ind014
Channel catfish	Carcass	LPR6-IPCT-Ind004
Channel catfish	Carcass	LPR7-IPCT-Ind005
Channel catfish	Carcass	LPR7-IPCT-Ind006

White catfish	Carcass	LPR6-ACCT-Ind010
White catfish	Carcass	LPR6-ACCT-Ind013
White catfish	Carcass	LPR7-ACCT-Ind014
White perch	Fillet (with skin)	LPR6-MAFT-Comp24
White perch	Fillet (with skin)	LPR6-MAFT-Ind122
White perch	Whole body	LPR7-MAWB-Ind123
White perch	Whole body	LPR7-MAWB-Comp25
American eel	Fillet (skinless)	LPR6-ARFT-Ind065



		Pesticides	DAUG (CADD
Lab SDG	Lab ID	(EPA 1699 Mod)	PAHs (CARB 429 Mod.)
B036065	FK7809	x	Х
B036065	FK7810	x	X
B036065	FK7811	x	X
B036065	FK7812	x	X
B036065	FK7813	x	X
B036065	FK7814	x	x
B036065	FK7815	x	X
B036065	FK7816	x	x
B036065	FK7817	X	x
B036065	FK7818	X	x
B036065	FK7819	X	x
B036065	FK7820	X	x
B036065	FK7821	X	x
B036065	FK7822	X	x
B036065	FK7823	X	x
B036065	FK7824	X	X
B036065	FK7825	X	x
B036065	FK7826	X	X
B036065	FK7827	X	x
B036065	FK7828	X	X
B036065	FK7829	X	X
B036065	FK7830	X	x
B044251	FO7636	X	X
B044251	FO7637	X	X
B044251	FO7638	X	X
B044251	FO7639	X	X
B044251	FO7640	X	X
B044251	FO7641	X	X
B044251	FO7642	x	x
B044251	FO7643	X	X
B044251	FO7644	x	X
B044251	FO7645	x	X

B044251	FO7646	X	Х
B044251	FO7647	X	х
B044251	FO7648	x	Х
B044251	FO7649	x	Х
B044251	FO7650	x	Х
B044251	FO7651	x	Х
B044251	FO7652	x	Х
B044251	FO7653	x	Х
B044251	FO7654	x	Х
B044251	FO7655	X	X
B044293	FO7800	X	x
B044293	FO7801	х	х
B044293	FO7802	X	Х
B044293	FO7803	х	х
B044293	FO7804	х	х
B044293	FO7805	x	Х
B044293	FO7806	X	Х
B044293	FO7807	x	Х
B044293	FO7808	x	Х
B044293	FO7809	x	Х
B044293	FO7810	x	Х
B044293	FO7811	x	х
B044293	FO7812	x	х
B044293	FO7813	X	Х
B044293	FO7814	x	Х
B044293	FO7815	X	Х
B044293	FO7816	X	Х
B044293	FO7817	X	Х
B044293	FO7818	X	Х
B044293	FO7819	X	Х
B044293	FO7820	X	Х
B044293	FO7821	x	Х
B044293	FO7822	x	Х
B044293	FO7823	X	Х
B044269	FO7728	x	х
B044269	FO7729	x	х
B044269	FO7730	x	х
B044269	FO7731	X	Х

B044269	FO7732	Х	Х
B044269	FO7733	Х	Х
B044269	FO7734	Х	Х
B044269	FO7735	Х	Х
B044269	FO7736	Х	Х
B044269	FO7737	Х	Х
B044269	FO7738	Х	Х
B044269	FO7739	Х	Х
B044269	FO7740	Х	Х
B044269	FO7741	Х	x
B044269	FO7742	Х	Х
B044269	FO7743	Х	x
B044269	FO7744	Х	x
B044269	FO7745	Х	x
B044269	FO7746	Х	x
B044269	FO7747	Х	X
B044269	FO7748	Х	x
B044239	FO7591	Х	x
B044239	FO7592	Х	x
B044239	FO7593	Х	x
B044239	FO7594	Х	x
B044239	FO7595	Х	x
B044239	FO7596	Х	X
B044239	FO7597	Х	X
B044239	FP7177	Х	X
B075209	GD7038	Х	X
B075209	GD7039	Х	X
B075209	GD7040	Х	X
B075209	GD7041	Х	X
B075209	GD7042	Х	X
B075209	GD7043	Х	X
B075209	GD7044	Х	X
B075209	GD7045	Х	X
B075209	GD7046	Х	х
B075209	GD7047	Х	х
B075209	GD7048	Х	х
B075209	GD7049	Х	х
B075209	GD7050	Х	х

D075000	007054		
B075209	GD7051	X	Х
B075209	GD7995	X	Х
B078232	GF1385	X	Х
B078232	GF1386	X	Х
B078232	GF1387	X	Х
B078232	GF1388	X	Х
B078232	GF1389	X	Х
B078232	GF1390	X	Х
B078232	GF1391	X	Х
B078232	GF1392	X	Х
B078232	GF1393	X	Х
B078232	GF1394	X	Х
B078232	GF1395	X	Х
B078232	GF1396	X	Х
B078232	GF1397	X	Х
B078232	GF1398	X	Х
B078232	GF1399	X	х
B078232	GF1400	X	Х
B078232	GF1401	X	Х
B078232	GF1402	X	Х
B078232	GF3036	X	Х
B078200	GF1237	X	х
B078200	GF1238	X	Х
B078200	GF1239	X	Х
B078200	GF1240	X	Х
B078200	GF1241	X	Х
B078200	GF1242	X	Х
B078200	GF1243	X	х
B078200	GF1244	X	х
B078200	GF1245	X	х
B078200	GF1246	X	х
B078200	GF1247	X	X
B078200	GF1248	X	X
	C2.10	^	^
B085396	GJ6764	X	Х
B090084	GL1411	X	Х
B090084	GL1412	X	X
2 00000 1	OL ITIZ	^	^

B090084	GL1413	X	Х
B090084	GL1414	X	X
B090084	GL1415	X	X
B090084	GL1416	X	X
B090084	GL1421	X	X
B090084	GL1422	X	X
B090084	GL1423	X	X
B090084	GL1424	X	X
B090084	GL1425	X	X
B090084	GL1426	X	Х
B090084	GL1427	X	X
B090084	GL1428	X	Х
B090084	GL1429	X	Х
B090084	GL1430	X	Х
B090084	GL1431	X	Х
B090084	GL1437	X	Х
B090084	GL1438	X	Х
B090084	GL1439	X	Х
B090084	GL1440	X	Х
B090084	GL1441	X	Х
B090084	GL1442	X	Х
B090084	GL1443	X	Х
B090084	GL1444	X	Х
B090084	GL1445	X	Х
B090038	GL1094	X	Х
B090038	GL1095	X	Х
B090038	GL1096	X	Х
B090038	GL1097	X	Х
B090038	GL1098	X	Х
B090038	GL1099	X	Х
B090038	GL1100	X	Х
B090038	GL1104	X	Х
B090038	GL1105	x	Х
B090038	GL1106	X	X
B090038	GL1107	x	Х
B090038	GL1108	x	Х
B090038	GL1109	x	Х
B090038	GL1110	X	Х
B090038	GL1111	X	x

B090038	GL1112	x	х
B090038	GL1113	x	Х
B090038	GL1114	x	Х
B090038	GL1115	x	Х
B090038	GL1116	X	Х
B090038	GL1120	x	Х
B090038	GL1121	X	Х
B090038	GL1122	X	Х
B090038	GL1123	X	Х
B090038	GL1124	X	X
B090038	GL1125	X	Х
B090038	GL1126	x	Х
B090038	GL1127	x	Х
B090038	GL1128	x	Х
B093261	GM8823	x	Х
B093261	GM8824	X	Х
B093261	GM8825	x	Х
B093261	GM8826	x	Х
B093261	GM8827	x	Х
B093261	GM8828	x	Х
B093261	GM8829	x	Х
B093261	GM8832	x	Х
B093261	GM8833	X	Х
B093261	GM8834	X	Х
B093261	GM8835	X	Х
B093261	GM8836	X	Х
B093261	GM8837	x	Х
B093261	GM8838	X	Х
B093261	GM8839	x	Х
B093261	GM8840	X	Х
B093261	GM8841	X	Х
B093261	GM9375	X	Х
B093245	GM8737	x	х
B093245	GM8738	x	х
B093245	GM8739	x	х
B093245	GM8740	x	х
B093245	GM8741	x	х
B093245	GM8742	x	х

B093245	GM8743	X	X
B093245	GM8746	X	X
B093245	GM8747	X	X
B093245	GM8748	X	X
B093245	GM8749	X	X
B093245	GM8750	X	X
B093245	GM8751	X	X
B093245	GM8752	X	X
B093245	GM8753	X	Х
B093245	GM8754	X	Х
B093245	GM8755	X	Х
B093245	GM8756	X	Х
	1		
B096590	GO4143	X	Х
B096590	GO4144	X	Х
B096590	GO4145	X	Х
B096590	GO4146	X	Х
B096590	GO4147	X	Х
B096590	GO4148	X	Х
B096590	GO4149	X	Х
B096590	GO4150	X	Х
B096590	GO4151	X	Х
B096590	GO4152	X	Х
B096590	GO4153	X	Х
B096590	GO4154	X	Х
B096590	GO4155	X	Х
B096590	GO4156	X	Х
B096590	GO4157	X	х
B096590	GO4158	X	Х
B096590	GO4159	X	х
B096590	GO4160	X	х
B096590	GO4161	x	Х
B096590	GO4162	X	х
B096590	GO4164	x	Х
B096590	GO4165	x	Х
B096590	GO4166	x	х
B096590	GO4167	x	х
B096590	GO4168	x	х
B096590	GO4169	x	х
B096590	GO4170	x	х

B096590	GO4171	x	х
B096590	GO4172	x	Х
B096590	GO4173	х	Х
B096590	GO4174	х	Х
B096602	GO4241	X	Х
B096602	GO4242	X	Х
B096602	GO4243	х	Х
B096602	GO4244	X	Х
B096602	GO4245	X	Х
B096602	GO4246	X	X
B096602	GO4247	X	Х
B096602	GO4248	X	X
B096602	GO4249	X	Х
B096602	GO4250	X	X
B096602	GO4251	X	X
B096602	GO4252	X	X
B096602	GO4253	X	X
B096602	GO4254	X	X
B096602	GO4255	X	X
B096602	GO4256	X	X
B096602	GO4257	X	X
B096602	GO4258	x	Х
B096602	GO4259	X	X
B096602	GO4260	x	Х
B096602	GO4261	X	X
B096602	GO6236	x	Х
B0F1671	GL1417	x	Х
B0F1671	GL1418	x	Х
B0F1671	GL1419	X	Х
B0F1671	GL1420	X	X
B0F1671	GL1432	x	Х
B0F1671	GL1433	x	Х
B0F1671	GL1434	X	х
B0F1671	GL1435	X	Х
B0F1671	GL1436	X	х
B0F1671	GL1101	X	Х
B0F1671	GL1102	X	Х
B0F1671	GL1103	X	X

B0F1671	GL1117	X	Х
B0F1671	GL1118	x	х
B0F1671	GL1119	x	Х
B0F1717	GM8830	x	Х
B0F1717	GM8831	X	Х
B0F1717	GM8744	x	Х
B0F1717	GM8745	X	Х
B0F1597	GO4163	X	Х

APPENDIX E. DATA MANAGEMENT

1 Introduction

General data rules for the tissue and sediment chemistry data collected in 2009 and 2010 have been established in the *Fish/Decapod Crustacean Tissue and Benthic Sediment Data Management Plan* (ddms [in prep]), and risk assessment-specific data rules are presented in the *Data Usability and Data Evaluation Plan for the Lower Passaic River Study Area Risk Assessments* (Windward and AECOM [in prep]).

Limited data reduction was done on the data presented in this data report. Reduction of the data presented in this report included the following:

- Totals were calculated for various parameters.
- A single result was selected in cases where multiple analytical methods were conducted.

The calculation of sums and the selection of single results is consistent with the rules presented in the *Fish/Decapod Crustacean Tissue and Benthic Sediment Data Management Plan* (ddms [in prep]).

2 Calculated Totals

Calculated totals based on varying treatments of non-detected concentrations are presented in this data report. Non-detected values were treated in the following ways for calculating totals:

- u Non-detected values were represented as zero.¹
- u Non-detected values were represented as one-half the reporting limit (RL).
- Non-detected values were represented as the full RL.

Calculated totals based on each of these rules are presented in the data report summary tables in the main document. Totals with non-detected values of zero (detected-only values) are presented in maps and graphs. The methods for calculating the totals that will be used in the risk assessments are presented in the *Revised Data Usability and Data Evaluation Plan for the Lower Passaic River Study Area Risk Assessments* (Windward and AECOM [in prep]). Table 1 presents the constituents that comprise the chemical sums reported in this data report. The constituents included in chemical sums are consistent with the summations described in the *Fish/Decapod Crustacean Tissue and Benthic Sediment Data Management Plan* (ddms [in prep]).

¹ If all components of a sum were non-detected, the calculated total concentration was represented by the highest RL.



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Table 1. Constituents for LPRSA data chemical sums

Chemical Sums ^a	Constituent Parameters
PCBs	
Total PCB congeners	209 PCB congeners ^b
Total PCB Aroclors	Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, Aroclor 1262, and Aroclor 1268
PAHs	
Total HPAHs	benzo(a)anthracene, benzo(a)pyrene, benzo(b/j)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene
Total LPAHs	acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene
Total PAHs	acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b/j)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene
Pesticides	
Total chlordanes	alpha-chlordane, gamma-chlordane, oxychlordane, cis-nonachlor, and trans- nonachlor
Total endosulfan	endosulfan I, endosulfan II, and endosulfan sulfate
Total 4,4'-DDT	4,4'-DDD; 4,4'-DDE; 4,4'-DDT
Total 2,4'- and 4,4'-DDD	2,4'-DDD; 4,4'-DDD
Total 2,4'- and 4,4'-DDE	2,4'-DDE; 4,4'-DDE
Total 2,4'- and 4,4'-DDT	2,4'-DDT; 4,4'-DDT
Total DDx	2,4'-DDD; 2,4'-DDE; 2,4'-DDT; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT

^a Partial sums were calculated in instances when a constituent parameter was missing (e.g., a compound rejected by validation). A "T(#)" data qualifier was applied to all partial sums. The "#" in the qualifier represents the number of constituent parameters that are missing from the sum value.

 ${\sf DDD-dichlorodiphenyldichloroethane}$

 ${\tt DDE-dichlorodiphenyldichloroethylene}$

 ${\sf DDT-dichlorodiphenyltrichloroethane}$

HPAH – high-molecular-weight polycyclic aromatic hydrocarbon

LPAH – low-molecular-weight polycyclic aromatic hydrocarbon

LPRSA - Lower Passaic River Study Area

PAH – polycyclic aromatic hydrocarbon

PCB - polychlorinated biphenyl

RL - reporting limit

SEM - simultaneously extracted metals

total DDx – sum of all six DDT isomers (2,4'-DDD, 4,4'-DDD, 2,4'-DDE, 4,4'-DDE, 2,4'-DDT and 4,4'-

DDT)

2 Reduction of Multiple Analytical Results for a Single Sample

Multiple validated results for a given sample were reported for several analytes. When multiple results were reported for a single parameter, the most appropriate result is reported in this data report, consistent with the best result selection rules for the



When calculating a PCB congener sum, only a single concentration associated with co-eluting congeners was included in the sum.

The twelve dioxin-like congeners are: PCB 77, PCB 81, PCB 105, PCB 114, PCB 118, PCB 123, PCB 126, PCB 156, PCB 157, PCB 167, PCB 169, and PCB 189.

Lower Passaic River Study Area 2009 and 2010 data as described in the *Fish/Decapod Crustacean Tissue and Benthic Sediment Data Management Plan* (ddms [in prep]):

- Analyte overlap occurred between the semivolatile organic compounds (SVOCs) and PAHs, and the results of the high-resolution gas chromatography (HRGC)/high-resolution mass spectrometry (HRMS) method used for PAHs was given precedence over the SVOC results. Specifically, the PAH HRGC/HRMS method results were reported for acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b/j)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenzo(a,h) anthracene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, and pyrene.
- Analyte overlap occurred between the SVOCs and organochlorine pesticides (i.e., hexachlorobenzene). The HRGC/HRMS organochlorine results were given precedence over the SVOC results.
- u In cases where two results were reported by the same laboratory for a given sample, the data validator selected the best result and documented that selection in the data validation reports.

3 Significant Figures and Rounding

For the purpose of providing data summaries, the reported (or assessed) precision of each result was explicitly stored in the database by recording the number of significant figures. The tracking of significant figures is important when calculating averages and performing other data summaries. Significant figures were first applied following the validation criteria outlined in Attachment 1, and then as the last step of the calculation of sums and averages.² The number of significant figures reported reflects the least precise value in the calculation (i.e., the lowest number of significant figures).

² Trillium, Inc. conducted a portion the data validation, as detailed in Section 5 of this report. Significant figures were adjusted by Trillium, Inc. during the validation as described in Attachment 1. Similarly, significant figures were adjusted for all fish/crab data for consistency.



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5 References

ddms. [in prep]. Fish/decapod crustacean tissue and benthic sediment data management plan, Lower Passaic River Restoration Project. Prepared by de maximis Data Management Solutions, Inc., for the Cooperating Parties Group. de maximis Data Management Solutions, Inc., St. Paul, MN.

Windward, AECOM. [in prep]. Lower Passaic River Restoration Project. Revised data usability and data evaluation plan for the Lower Passaic River Study Area risk assessments. Draft. Prepared for Cooperating Parties Group, Newark, NJ. Submitted to USEPA April 13, 2012. Windward Environmental LLC, Seattle, WA; AECOM, Inc., Westford, MA.



ATTACHMENT 1



MEMORANDUM

Date: October 8, 2010; Revised December 20, 2010

To: Jennifer Parker, Windward

From: Dee Shepperd, Trillium, Inc.

Re: Rationale for adjusting significant figures in analytical results

Trillium performs independent third-party validation of analytical data with two objectives: (1) assessing the usability of the results for the purpose intended and (2) determining whether or not the data and documentation provided are adequate to support the results in a court of law. The products of the validation, in the form of text reports, data summary forms, and annotated Form 1s (laboratory report forms), serve to inform the data user about the reliability of the reported concentrations, as well as the validator's best judgement concerning any gaps or weaknesses in the documentation to support them.

The usability of the results involves an evaluation of the accuracy and precision of the reported concentrations. This includes an assessment of the handling of the samples from collection through analysis, the laboratory's performance of the analytical method, and evaluation of the variance in the sample matrix itself. Determining how well the reported results can stand up to scrutiny in a legal proceeding requires evaluation of all of the supporting data and documentation to ensure that each reported result can be traced all the way back to the collection of the sample.

The United States Supreme Court in Daubert¹ listed four "non-exclusive" factors that courts should consider in evaluating the validity of the basis for expert opinions. Analytical data are also subject to these same criteria, which are:

- 1. Can the data be replicated?
- 2. Is there a known error rate or variability?
- 3. Have the data been subjected to peer review?
- 4. Are the data generally accepted?

Daubert v. Merrell Dow Pharmaceuticals, Inc. (1993) 509 U.S. 579, 589

Data validation is peer review. The data are generally accepted if the laboratory has shown that the method has been correctly performed. The data must include replicate analyses and there is a known accuracy and precision presented with the data in the number of significant figures used for data reporting.

All analytical methods will give differing results for a sample. The known or potential error term is a statistical measure of how different these results are likely to be. In analytical chemistry, the method is the entire analytical procedure used to identify and measure the concentration of analytes in a sample matrix. The error term, or "measurement uncertainty," is reflected in the number of significant figures used to report the results. It is critical to present sample concentrations using only the significant figures that are appropriate to the data set. The error term implied by the significant figures must be supported by the available data and documentation and must be demonstrated to be repeatable for the results in the data set.

No analytical result can be more accurate than the factors used to determine it. In other words if a balance, accurate to $0.1~\rm g \pm 0.1~g$, is used to weigh a sample, a result of $0.11~\rm g$ cannot be defended because that result implies greater accuracy and precision than can be achieved with the measurement system. Likewise, a calibration curve produced by analyzing standards concentrations of 5.0, 10, 50, 100, and $200~\rm pg/mL$ cannot produce a defensible calculated result of $5.01~\rm pg/mL$.

The last significant figure in an analytical measurement is the only figure that should express variance. For instance, a result of 1.6 reflects two significant figures and an error term of ± 0.1 , meaning that the result could be 1.5, 1.6, or 1.7. The error term is expressed as 62 parts per thousand or 6.2%. If the result is reported with three significant figures, as 1.62, a smaller error term is expressed (6.2 parts per thousand or 0.62%), meaning that the result could be 1.61, 1.62, or 1.63, but not 1.5 or 1.7. Supporting this level of accuracy and precision at this concentration range would require that the laboratory can routinely and demonstrably analyze two portions of the project-specific sample with duplicate agreement of less than 1 relative percent difference (RPD).

The error term for any data set will include variability for all steps involved in the sample collection and handling, preparation, calibration, analysis, and calculation of final results. The use of various QA/QC procedures are intended to allow the sampler, the laboratory, the validator, and data user to assess the variance inherent in that result. The aim of the laboratory is to provide the most accurate and precise results possible for each sample and parameter, using the required methods. The laboratory does this by limiting variability due to analytical techniques.

When validating data, Trillium routinely reduces the number of significant figures where necessary to protect the defensibility of the data. When a laboratory reports more significant figures than are supported by the data provided, adjustments are made to protect the data user in the event that the results are used in litigation. This process includes examining the accuracy and precision

of the measurement system used, the accuracy and precision of the calibration standards and spiking solutions, as well as the accuracy and precision of physical measurements made during sample handling, preparation, and analysis.

Each of the parameters reviewed by Trillium is discussed below. The number of significant figures reported by the laboratories, the number of significant figures to which results and RDLs and/or MDLs were adjusted by the validators, as well as the rationale for the adjustment are given in this discussion.

1. <u>Dioxin/furan and PCB congener</u>

Results and EDLs were reported by Analytical Perspectives with one to three significant figures. Concentrations of the standards used to establish calibration were presented with one or two significant figures, therefore, it is appropriate to report the results to one or two significant figures.

The lowest concentration used in quantitation of results was documented as 0.25 pg/ul for DD/DF and 0.5 pg/ul for PCB congeners. These documented values represent error terms of 4.0 % and 20 %, respectively, and imply that the concentrations measured could actually be 0.26 pg/ul to 0.27 pg/ul for DD/DF and 0.4 to 0.6 pg/ul for PCB congeners. The spiked blank analyzed to demonstrate instrument sensitivity for PCB congeners is documented to have been spiked at a concentration of 0.25 pg/ul, therefore it is assumed that the lowest IC standard for PCB congeners is actually accurate as 0.50 pg/uL. It is not possible for sample results to exceed the accuracy of the IC, therefore, results and reporting limits for DD/DF and PCB congeners were adjusted to two significant figures.

Organochlorine Pesticides (OCPs) and PAHs by HRMS

Maxxam reported results and EDLs for OCPs and PAHs with two or three significant figures. Results were reported inconsistently, even within the same sample. For instance, in a single sample analysis with a dilution factor of 20, the pesticide analyte Oxychlordane was reported at a concentration of 0.162 ng/g, and the result for trans-Nonachlor was reported at a concentration of 3.7 ng/g. It is not possible to produce a more accurate result at a lower concentration for one analyte and a less accurate result for another at a higher concentration in the same run (both analytes having the same reporting limit). On this basis, results and EDLs were adjusted to two significant figures where necessary.

3. Semivolatile and Volatile Organic Compounds (SVOCs and VOCs)

Alpha reported SVOCs and VOCs with three significant figures. IC standards were documented with one or two significant figures. Trillium only adjusted the results to a maximum of two significant figures.

4. Alkyl PAHs

Alkyl PAHs were reported by Alpha with three significant figures. No target alkyl PAH compounds were included in the calibration established for the alkyl PAH compound analysis. Response factors from the parent compounds are assumed to be applicable to all of the alkyl-substituted PAHs associated with each parent compound. The use of assumed response factors produces estimated values. Although the use of one significant figure for estimated values is more defensible, Trillium only adjusted the results to a maximum of two significant figures.

5. Herbicides and PCBs as Aroclors

Herbicide and PCB as Aroclor results were reported by Alpha with three significant figures. For PCBs as Aroclors IC standards were documented with one or two significant figures. Herbicides IC standards were documented with as many as five significant figures. This level of accuracy implied is not possible with method 8151 and the IC standard concentrations were assumed to be accurate to one or two significant figures. Trillium adjusted the results for PCBs as Aroclors and Herbicides to a maximum of two significant figures.

6. Wet chemistry parameters (ammonia, phosphorus, sulfide, AVS, TKN, and cyanide)

Results and reporting limits for the wet chemistry parameters were reported inconsistently by CAS, with one to three significant figures. Total phosphorus and AVS samples that were run undiluted were reported by the laboratory with two significant figures while samples that were diluted by a factor of ten were reported with three significant figures, suggesting increased accuracy after dilution. That is not supportable and Trillium adjusted the results to a maximum of two significant figures where necessary.

Lower concentrations of total sulfide (i.e., 1.33 and 2.85), reported with three significant figures, suggested greater accuracy than higher concentrations (i.e., 6.9 and 9.7). This is not supportable and Trillium adjusted the results to a maximum of two significant figures where necessary.

Ammonia results were reported with two or three significant figures. Final extract volumes were documented with one significant figure and calibration standards from one to three significant figures. Therefore, results were adjusted to a maximum of two significant figures.

TKN results were reported to two and three significant figures. Final extract volumes were documented with one or two significant figures; calibration standards were documented with one to three significant figures. Trillium adjusted the results to a maximum of two significant figures.

TOC results were reported to three significant figures. Trillium adjusted TOC results to two significant figures. Calibration standards are accurately measured to one or two significant figures according to the laboratory SOP.

Cyanide results were reported by the laboratory with one or two significant figures and these were not adjusted by Trillium.

Lipids in tissue samples were reported by the laboratory to two significant figures. No adjustments were made to these results by Trillium.

7. Butyltins

Results for butyltins were reported by CAS with two significant figures and these were not adjusted by Trillium.

8. Total Mercury and Methylmercury and Inorganic Arsenic

Results were reported by Brooks Rand with one, two ,or three significant figures. Calibration standards were documented with one or two significant figures. Trillium adjusted results to to a maximum of two significant figures where necessary.

9. Total Metals and Simultaneously Extracted Metals (SEM)

Results for total metals were reported by the laboratory with as many as five significant figures. This practice overstates the accuracy of the method. Trillium adjusted the results to three significant figures for values greater than ten mg/kg, and to two significant figures for values less than ten mg/kg. This is consistent with the ILM05.3 and is a more realistic representation of method accuracy.

SEM results were reported with two to four significant figures. Trillium adjusted the results to three significant figures.

10. TPH (Alkanes, Purgeables, and Extractables)

TPH-Alkane results were reported inconsistently by the laboratory using one, two, and three significant figures. Positive results below the RDL, for example, where the greatest uncertainty is expected, were reported with up to three significant figures, while higher concentrations were reported with one or two. Trillium adjusted positive results to a maximum of two significant figures for the TPH-Alkanes.

Results were reported to three significant figures in the two samples with positive results for TPH-Purgeables, even though the results were below the RDL where the greatest uncertainty is expected. Trillium adjusted the positive results for TPH-Purgeables to one significant figure.

Results for TPH-Extractables were reported to two and three significant figures. The subtraction of the baseline of the instrument blanks from all samples produced increased uncertainty in the results. The reproducibility criteria in the QAPP between laboratory duplicates was high for this method (50 RPD). Trillium adjusted the positive results to a maximum of two significant figures for the TPH-Extractables.

The criteria required by the QAPPs prepared for this project stipulate acceptable reproducibility between laboratory duplicates as agreement equal to or better than 20 to 50 RPD for the various parameters. For field duplicates, the QAPP criterion for agreement is generally 50 RPD. The analytical methods used allow 10%, 15%, 25%, 30%, and even 35 % RSD for initial calibration factors or response factors across the calibration range. The most stringent recovery criteria for calibration verification standards, spikes, and reference materials stipulated in the analytical methods are 90 to 110% in the metals analyses. Other parameters provide limits that range as low as 10% and as high as 150% or more.

The laboratory's results are intended to represent the analyte concentrations present in the environmental matrices at the locations sampled. The variability in the measurement procedure and the laboratory's performance of it is one part of the error term. Sample handling contributes to the error term, and a significant source of variability in the results for this project is present in the sample matrices themselves. An examination of the agreement, or lack thereof, between laboratory duplicates and field duplicates for the many analytes measured for this project demonstrates the high error term that can be expected for sediment and tissue samples. By adjusting results to a number of significant figures supportable by the data and the documentation, the overall accuracy of the measurements is better represented.

For the analytical methods specified in the two project-specific QAPPs, it is appropriate to report the results using one or two significant figures. The only exceptions are the parameters which rely solely on weight determinations for measurement and calculation (percent grainsize and percent solids/moisture). These parameters can reliably be reported to three significant figures, depending on the accuracy of the analytical balance(s) used. And the error term for even these results is subject to the homogeneity of the matrices.

References:

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